OHIO STATE UNIVERSITY
AUG - 4 1945
LIBRARY

FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

JULY, 1945

New Haven Conducts Large Scale Water-Fog Fire Tests

A CASE - SHEPPERD - MANN PUBLICATION

Carefree—
Bathers Today
may be your—
Drowning Victims
Tomorrow!

Prepare Now *for this EMERGENCY*
with the **EMERSON**
RESUSCITATOR

The beach is Asphyxia's playground, too!

Every chief who protects a bathing beach, a pond, or just a water-hole where kids swim has this potential hazard —

To cope with this problem prepare yourself now with the finest equipment available — the EMERSON RESUSCITATOR with its automatic signal of froth, usually present in drowning cases, and its aspirator to remove it, has demonstrated its superiority in America's foremost parks and beaches.

★ *Send for literature or an actual demonstration.* ★

J. H. EMERSON COMPANY
Representatives in Principal Cities
22 COTTAGE PARK AVENUE • CAMBRIDGE, MASS.

How POWER is built into this FEDERAL Traffik-King COASTER SIREN

FEDERAL SIREN FEATURES

Rotor: die-cast zinc alloy or cast aluminum; precision machined and individually balanced. Large air volume slips easily past the thin, smooth rotor blades; minimum current consumption.

Ports: knife-edge ports in rotor and stator assure sharp, true pitch, tremendous volume. Accurately spaced, carefully machined for tone quality, clearness, and power. Number of ports balanced with motor speed for high efficiency.

Coaster Brake: stops roll, and sound, instantly; operated by separate button on dash. This is actual electric solenoid brake on the rotor; no harmful reversing of motor.

Motor: heavy duty, long life; low friction bronze or ball bearings; 6 to 12 volt models.

Oscillating Red Light: driven by separate motor enclosed in front housing; no external parts to freeze or jam; swings horizontally; no wasteful up-and-down motion.

TRAFFIK-KING Coaster Siren

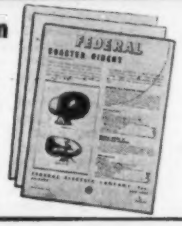
Traffik-King sirens have a tremendously powerful tone that demands attention, clears the way. This model has a clear-cut distinctive double tone; and coasts almost two minutes after current is off.

This is a true coaster type. Special clutch mechanism releases the rotor, allowing it to coast much longer than so-called "long-roll" types, which seldom roll over 30 seconds. Siren can be stopped instantly with the electric brake, which is available if desired.

A wide choice of Federal sirens is available—with oscillating or flashing lights; single or double tone; special brackets available for roof or fender mounting. All are durably built and precision-machined for long service and powerful clear-the-way tone. For fire, police, ambulance, general alarm, and industrial use. Write for illustrated bulletin on types you need.

Get this Bulletin FREE

Details, illustrations, and prices on this and other types of Federal Sirens. Write today.



FEDERAL ELECTRIC COMPANY, INC.

SIREN HEADQUARTERS

8702 SOUTH STATE STREET, CHICAGO 19, ILLINOIS

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

CONTENTS

Vol. 98 July, 1945 No. 7

	Page
With the Editor By Fred Shepperd	451
The Paris Fire Brigade — Before and After the Liberation By Arthur H. Selleck	452
Porto Rico Fire Wipes Out Half of Rural Community By Raul Gandara	454
Fire Station Provided for War-Impacted Communities By Harry Hewes	456
New Trend in Fog Application Shows Promise at New Haven By Roi B. Woolley	458
Rice Mill Fire Extinguished after Burning for Five Days A Staff Report	459
The Watch Desk By Roi B. Woolley	461
Short Cuts and Gadgets	462
Questions and Answers	463
The Round Table Reinstatement of Discharged Veterans in Fire Departments	464
False Alarms	465
Book Shelf	466
Manufacturers' Announcements	486
What's Burning	488
Correspondence	499
War Fare By Roi B. Woolley	502

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

MOST IMPORTANT of the YEAR!

THE business and professional journal, always indispensable to the field it serves, occupies a very special and unique position today, what with the O D T applying the axe to all conferences of any magnitude.

● A publication such as FIRE ENGINEERING, for example, can never take the place of a national fire service conference. But it can bring to the service many of the major features of a national conference, such as educational and instructional reports and papers; news of the fire service — what's what about who's who from coast to coast; and not the least important, the "exhibits" of the leading manufacturers of fire apparatus and equipment.

● There will be no International Association of Fire Chiefs conference this year. Instead, "all-hands" will get together in the interests of a bigger, better fire service through the pages of the "Conference-in-Print" August Issue of FIRE ENGINEERING, and the I.A.F.C.'s special "conference-in-print proceedings". Together, these publications will, in effect, bring you the "meat" of a mythical meeting of minds, which you and all other leaders in the fire service can enjoy at your convenience, in comfort and quiet, without worry over travel or hotel reservations. Your only "registration fee" for FIRE ENGINEERING'S "Conference-in-Print" is your subscription.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price U. S. and Latin America, $2.50 a year; Canada, $3; Foreign, $3.50; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1945, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Advertising Manager, WILLIAM J. GIBSON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 6 No. Michigan Ave., Chicago 2, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAUBIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"

BUFFALO
better-built
SAFE
POWER BRAKES

1895-1945
GOLDEN ANNIVERSARY
50 Years of Service

BUFFALO FIRE APPLIANCE
CORPORATION
M & T BUILDING BUFFALO 2 NEW YORK

ORIGINATED BY JOHN BEAN MFG. CO.

THE ORIGINAL HIGH-PRESSURE FOG FIRE GUN

600 lbs. AT THE NOZZLE!

The FMC Fog Fire Gun—built only by Bean—is designed especially for High-Pressure fire fighting. There's nothing else like it!

Note these features:

1 **PROTECTIVE SPRAY.** Special spray protects face and shoulders from heat.

2 **ADJUSTING BARREL.** By turning barrel, flow can be changed from a straight "power" stream to a close-up fog for any type of fire.

3 **TRIGGER GRIP.** Gives natural position to arm and grip and is easy to hold. No fatigue.

4 **GUN LOCK.** Stream can be set in any pattern and locked there if desired. Relieves arm muscles.

5 **HOSE SWIVEL.** Eliminates bothersome twisting of hose.

FMC FOG FIRE GUN IN ACTION! *Fireman at left is holding trigger release with his right hand and adjusting barrel with his left hand. By turning the barrel slightly, he can change the flow from a straight stream to a wide fog pattern, and can get close to fires to do effective work.*

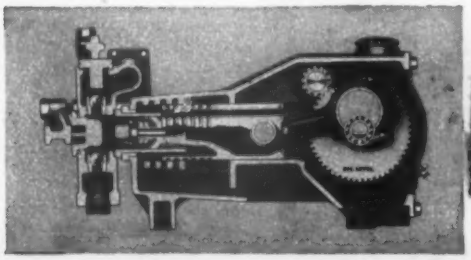
A ONE-MAN JOB! *With pressure on, the FMC Fog Fire Fighter gun practically carries itself and can be poked into cellars, attics or holes in partitions. If the fire is intensely hot, it is possible to use the protecting spray nozzle to protect your face from the heat and work right up to effective distance from the fire.*

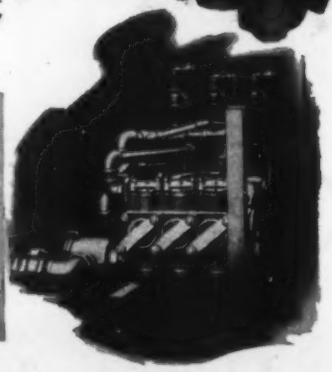
FMC HIGH PRESSURE PUMP

Built only by Bean

This is the pump that is revolutionizing fire-fighting technique.

Note how sturdy and compact it is — how simple, yet modern in design! The cylinders are porcelain-lined; the gears are helical cut, and there are latest type heavy duty bearings on the eccentric shaft and countershaft. Both the ball valves and their threadless and gasketless tapered seats are of stainless steel. And all working parts are bathed in oil. It has many other proven endurance features.





800 lbs. AT THE PUMP!

That's a pretty tough job for any unit. But — the FMC High-Pressure Pump easily maintains that pressure, without overworking. The reason? It is a 3 cylinder, positive displacement horizontal and compact pump designed for even higher pressures by F.M.C. High-Pressure Pump engineers.

BUILDERS OF BEAN HIGH-PRESSURE

It will help you if you will mention FIRE ENGINEERING *when writing advertisers*

KNOCKS DOWN FIRES—FAST

THIS IS WHAT HAPPENS WHEN FMC FOG IS APPLIED TO A FIRE!

1. Blasting Action. The FMC High-Pressure Fog forces the flame away from the burning material. Additional fog soon reduces the temperature below the combustion point.

2. Cooling Action. The fine fog particles absorb heat more rapidly than ordinary droplets of water. The result? More heat absorption per gallon of water.

3. Smothering Action. The steam—created by the fog—soon smothers the flames. There's not enough free oxygen to support combustion.

4. Penetrating Action. The high-pressure velocity enables the fog to be blasted through the flame to concealed fires.

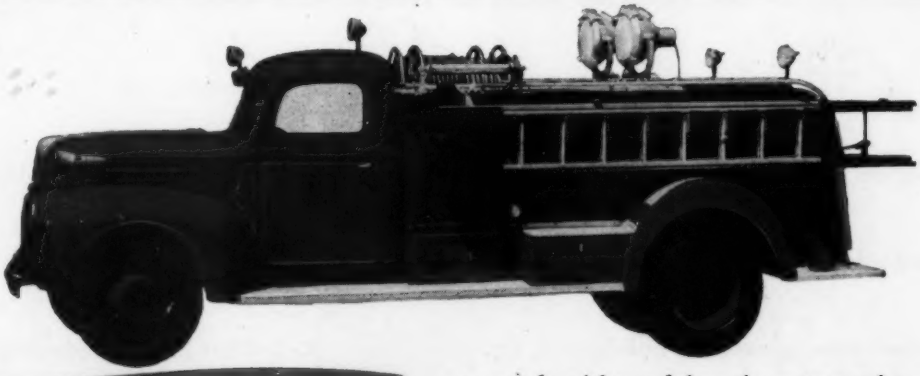
5. Smoke and Gas Eliminated. The force of the fog discharge blows the smoke away. The fine particles of fog absorb both smoke and gas.

6. Minimum Water Damage. Due to its fineness, speed and heat-absorbing properties, the high-pressure fog is completely used up. Water damage is practically eliminated.

The entire water system is protected against freezing.

WIDE FOG PATTERN AND MIDDLE SETTING

STRAIGHT POWER STREAM



REASON No. 3
THE FOG FIRE FIGHTER

The FMC High-Pressure Fog Fire Fighter carries its own water supply and complete fire fighting equipment. So — the fireman can go to work without delay, the moment he arrives at the fire.

There are two guns of 30 gallons each at 600 lbs. nozzle pressure. The flow of these guns can be adjusted to produce any type of fog formation that may be needed — from a wide fog pattern to a straight power stream.

Investigate! FMC High-Pressure Fog is constantly proving its worth at hundreds of town, rural and airport fires. Write — today — for complete information.

FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., 709 HAZEL ST., LANSING 4, MICH. • BEAN-CUTLER DIVISION, 409 JULIAN ST., SAN JOSE, CALIF.

PUMPS FOR OVER SIXTY YEARS

Let's see what we know about fires...

Okay Mister. We'll start with the classifications designated by the National Board of Fire Underwriters. Class "A" Fires . . . . Wood, Textiles, Rubbish, etc. These fires call for liquid – filled extinguishers. Class "B" Fires . . . . Oils, Greases, Gasoline. Flammable Liquids are extinguished in seconds with C-O-TWO Squeez-Grip portables, wheeled and hose units and built in systems because carbon dioxide is a dry, inert, non-deteriorating gas, the fastest non-damaging fire extinguisher. It cuts off oxygen and kills the fire in seconds without damage to materials. Class "C" Fires....in Electrical Equipment,—motors, generators, transformers, etc. C-O-TWO is non-conducting, non-freezing .... is stored in high pressure cylinders and when released penetrates to the fire by the tremendous pressure of its own expansion. C-O-TWO puts out electrical fires in seconds.

Write for further fire protection information. C-O-TWO manufactures modern carbon dioxide

fire extinguishing and smoke detecting equipment. C-O-TWO Kills Fire — Saves Lives — It's Safer — It's Faster

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 NEW JERSEY
Sales and Service in the Principal Cities of United States and Canada
AFFILIATED WITH PYRENE MANUFACTURING COMPANY

Another Progressive City Goes MACK!

When you're proud of your city, you don't gamble on its fire-fighting equipment. You play safe . . .

So, when the fast-growing City of Edinburg, Texas, got ready to buy a pumper . . . it followed the example of many other Texas cities and picked the make with an outstanding record of reliability, stamina and rugged performance. *It picked a Mack.*

Texas and all America know, from 34 years of fighting fire with Mack, that Macks get there and get it out—*fast.*

Mack
FIRE APPARATUS

If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

PERFORMANCE COUNTS!

MACK MANUFACTURING CORPORATION, FIRE ENGINE DIVISION
EMPIRE STATE BUILDING, NEW YORK 1, N. Y.

WAYNE GOES TO THE RESCUE

Members of the Wayne, Mich., Fire Dept. with their E & J Resuscitator, Inhalator and Aspirator

"DROWNED" BOY SAVED!

with the

E & J RESUSCITATOR INHALATOR and ASPIRATOR

When the Wayne, Mich., Fire Department recently went to the aid of a "drowned" boy they did not know that a physician had already declared him dead. Racing at 80 miles an hour from Wayne to Northville, the scene of the accident, the Wayne firemen, using their E & J Resuscitator, Inhalator and Aspirator, completely revived the boy in 36 minutes; and, it was later reported he had suffered no ill effects.

Such an achievement certainly speaks well for the Wayne Fire Department, not only because of the alertness of Chief Hank Goudy and his men but because of their foresight and progressiveness in having an E & J.

The unfailing dependability of E & J automatic breathing machines is far from being a matter of luck. It is the result of sound engineering practice and precision workmanship coupled with many years of specialized experience in mechanical artificial respiration.

★ *For further information write any of our distributors listed below* ★

E & J MANUFACTURING CO., GLENDALE, CALIF.

Philadelphia New York City Pittsburgh Detroit, Mich. Boston Chicago
3032 W. 25th Ave., Denver, Colorado 5005 Euclid Ave., Cleveland, Ohio

Pioneers and Specialists in Mechanical Artificial Respiration

CONSIDER WARD LAFRANCE FIRST

SHORT TURNING RADIUS

Front axles have exceptionally wide tread, providing high wheel deflection. This assures short turning radii so essential in communities having narrow streets.

NEEDLE BEARING DRIVE SHAFTS

Drive shaft construction reduces friction to a minimum. The type of joints used are designed to provide efficient power transmission even under high angular alignment.

POWERFUL SIX-CYLINDER ENGINE

Every piece of apparatus is equipped with a heavy-duty six-cylinder engine designed for actual use of rated horsepower and built especially for fire service.

CAM AND LEVER TYPE STEERING

Steering gear is mounted on the top of the frame for ready removal. Gear sizes are proportionate to the weight and tire sizes on the front axle system.

EXTRA WIDTH FLANGE ON FRAME

Side rails are made from highest-quality pressed steel. The extra width flange provides an unusually strong frame rail and increases load-carrying capacity.

TWO-STAGE CENTRIFUGAL PUMP

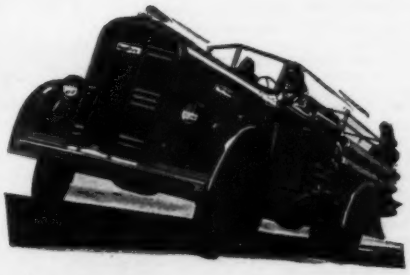
Upper halves of the pump and transmission case are bolted to the lower half by one horizontal flange only. Can be disassembled in the chassis.

WARD LAFRANCE

TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC.

ELMIRA NEW YORK



THE NO. 1 BUY IN FIRE APPARATUS

Now Ready! NEW RCA FM[illegible] POLICE and FIRE[illegible]

Features—New Advantages [illegible]

New RCA 26-42 MC (Mobile or Station) Transmitter Features

1. Superior audio quality sets new standard. Sounds better. Easier on the ear. Easier to get message.
2. Positive modulation threshold limiter. Adjusts automatically to input of low or loud voices. No "blasting."
3. Low spurious emission. Less extraneous noise interfering with other services. Fewer energy leaks to make trouble.
4. Improved phase modulator requires no tuning. No more bother with modulator.
5. Excellent stability over wide temperature range. Temperature change has minimum effect on operation of equipment.
6. Adjustable to exact, specified frequency. Easy, precise tuning in a hurry.
7. All tuning adjustments are from top of transmitter. Easily accessible. (Remember those times you have had to turn the chassis over?)
8. No high voltage exposed above chassis. All dangerous voltage out of reach. (Many times a slip of the hand might have given you a shock.)
9. Provision for two-frequency operation. Useful when you want to switch over from talking between car and station to talking between car and car (and in lots of other ways).
10. Single control cable—also accommodates receiver. One cable, instead of three or four, running from front of car to rear. Simplifies installation and maintenance.
11. Mobile cables equipped with separable connectors. Add flexibility in operating equipment. Equipment removable without using special tools. All cables plug in and lock.
12. Chassis readily detached from base. Easier to inspect and service.
13. Single-unit construction saves space.
14. Easy to install. Mounting hardware supplied. Comes complete, down to bolts and nuts.
15. Start-stop switch on chassis to facilitate adjustment. (Think how much better this is than having to go up front and press a button to turn on the transmitter.)

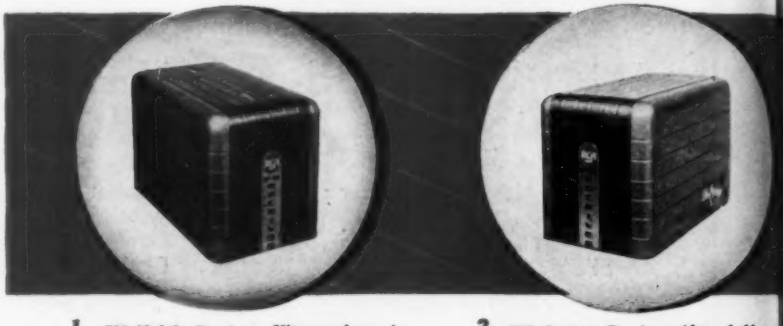
New FM 26-42 MC (Mobile or Station) FM Receiver Features

1. Superior adjacent-channel selectivity. You hear the station you want to hear.
2. Low spurious response. Won't pick up unwanted signals.
3. Excellent stability over wide temperature range. Variations in temperature have minimum effect on operation.
4. Single-unit construction. Fewer interconnecting cables. Easier to service.
5. Easy to install. Mounting hardware supplied. Comes complete, down to last nut and bolt.
6. Chassis readily detachable from base. Easy to remove for inspection and servicing.
7. Mobile cables fitted with separable connectors. Cables plug in and lock. Require no special tools. (Another important point—you can't plug in the wrong cable!)
8. Low battery drain. Less battery servicing.
9. Class B output tube saves power on standby. Output stage takes very little power except when signal is being received.
10. Provision for carrier-operated relay. Can be used to operate other circuits for auxiliary signalling—turn on light, ring bell, etc.—or operate retransmitting equipment.
11. Single crystal. Eliminates potential trouble with matching crystals.
12. Attractively styled. And we mean darned good-looking.

• This is news!

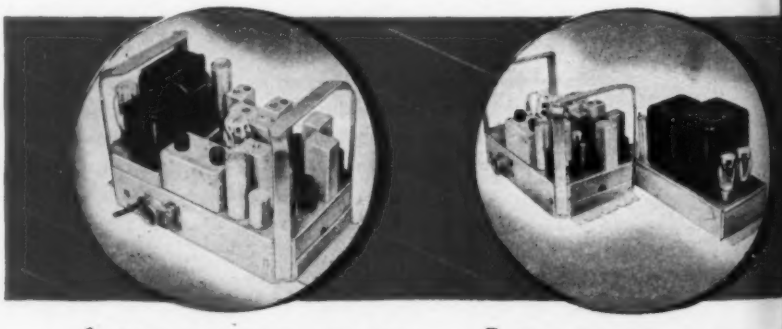
RCA—the leading prewar manufacturer of police- and fire-department radio equipment, and wartime manufacturer of the most advanced types of military radio and radar equipment—has a complete new line of FM equipment rolling off the factory line and ready for delivery . . . now!

When you see it, operate it, hear it—observe its superior convenience, performance, and facilities for easy, quick servicing—



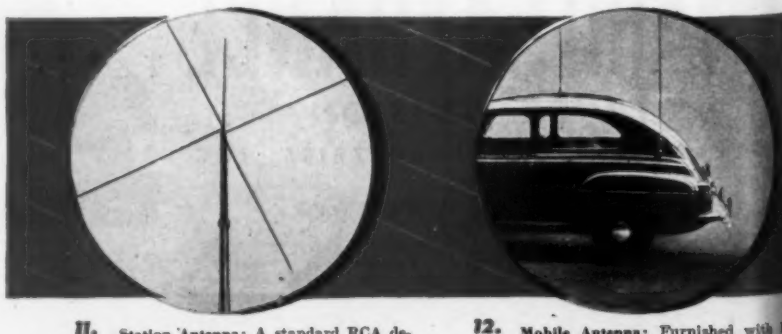
1. FM Mobile Receiver: Ultra-modern circuits, construction and styling. Small, compact, rugged. Easily removed from mounting base. Simple to service. Provided with either dynamotor or vibrator type power supply.

2. FM Station Receiver (for shelf-mounting): Same chassis unit as #1, but intended for shelf-mounting in headquarters control room. Easily and quickly installed. Attractively styled cover adds to station's appearance.



6. 30-Watt FM Station Transmitter: Uses same chassis unit as #4. Can be furnished with dust cover (as shown in #4) for shelf-mounting, or with brackets for mounting in standard RCA cabinet-rack, such as shown in #8.

7. 60-Watt FM Station Transmitter: Uses same chassis as #5, but is furnished with chassis brackets for rack-mounting. A power supply is a separate chassis unit, furnished for shelf-mounting.



11. Station Antenna: A standard RCA design of proved performance. Consists of vertical radiator plus four "ground" rods. Easy to install, neat appearing, and provides more gain than simple rod type.

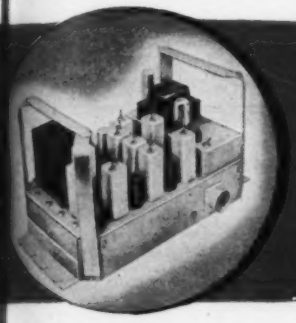
12. Mobile Antenna: Furnished with [illegible] mobile transmitters shown above. Two models, one for roof-top, the other for fender mounting. Simple one-hole mounting. Supplied complete with connecting coaxial [illegible]

RADIO EQUIPMENT *for* DEPARTMENTS—*New Design—New*

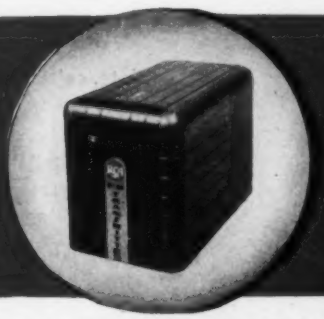
An Entirely New Standard of Performance

will agree that this new RCA equipment sets a new standard radio usefulness for police- and fire-department requirements. It tunes easier, sounds better, is more stable. It operates ply, smoothly, surely. It is more selective, requires fewer justments, and less maintenance, yet can be serviced more ckly, easily, and safely.

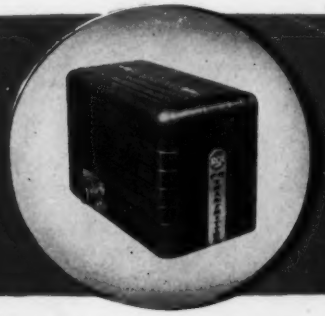
These are strong claims. They are claims you should investi-te—and we invite you to do so. For your convenience, a coupon is at the lower right-hand corner of this page to bring you the whole story. But first, read the column at the left—study the pictures below, read the captions under them—then fill in the coupon. And remember that at any time you wish an RCA engineer will show you how these new RCA equipments can be used to best advantage for the special needs of your police or fire department.



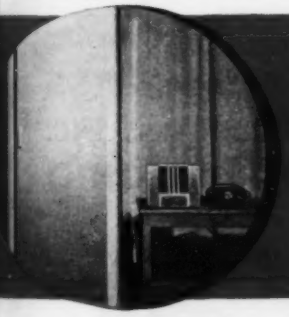
M Station Receiver (for rack-mount- Also, the same chassis unit as #1, but ut cover, and provided with brackets ounting in a cabinet-style rack. This is ype of mounting used in most larger lations.



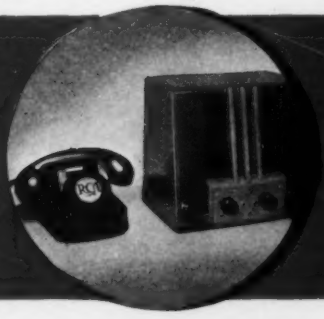
4. 30-Watt FM Mobile Transmitter: Mounted in attractively styled housing matching the receiver unit. Makes use of improved phase-modulator circuits providing better quality and better stability. Arranged for two-frequency operation, if desired.



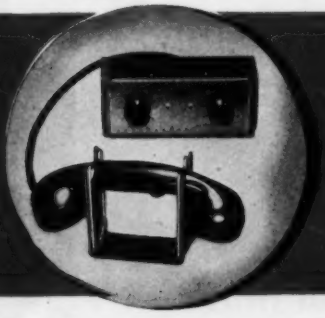
5. 60-Watt FM Mobile Transmitter: Similar to #4 in over-all size and appearance, but provided with additional tube in output stage, in order to obtain full 60-watt carrier. Both transmitters use built-in dynamotor supply.



250-Watt FM Station Transmitter: Con- of the two chassis shown in #7 (as an ter), plus a 250-watt amplifier, mounted a similar-type chassis. All assembled in ttractively styled cabinet rack.



9. Station Handset and Control Unit: Furnished with the FM Station Transmitters shown here. The control unit contains a loudspeaker, plus controls for adjustment of "volume" and "squelch." Also, "transmit," "receive," and "stand-by" signal lights.



10. Mobile Handset and Control Unit: Furnished with the FM Mobile transmitters shown above. The two units can be conveniently mounted on the dash in any desired position. Control includes "volume" and "squelch." Signal lights indicate "transmit" and "stand-by."

Mail this Coupon and get New Bulletin!

For Complete Information, Specifications, Pictures, Diagrams—Use This Coupon

EMERGENCY COMMUNICATIONS EQUIPMENT SECTION
Radio Corporation of America, Camden, N. J.

Please send me complete data about your new FM Radio Equipment for Police and Fire Departments.

Name.....

Title.....

Employed by.....

Street Address.....

City and State.....

127 U

RCA

Buy War Bonds

RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

In Canada, RCA VICTOR COMPANY LIMITED, Montreal

AKRON

MULTIVERSAL PORTABLE DELUGE NOZZLE

A complete, self-sustaining, fire-fighting necessity of maximum flexibility and capacity, occupying a minimum of space.

SELF-SUSTAINING—Once placed in position and under pressure, this nozzle remains stationary without further attention or assistance.

MAXIMUM FLEXIBILITY—Stream may be directed up or down, or in a complete circle without moving the base.

MAXIMUM CAPACITY—Handles one, two, three or four hose lines. Automatic clapper valves on intake manifold facilitate volume control.

AKRON BRASS MFG. COMPANY, INC.
WOOSTER, OHIO

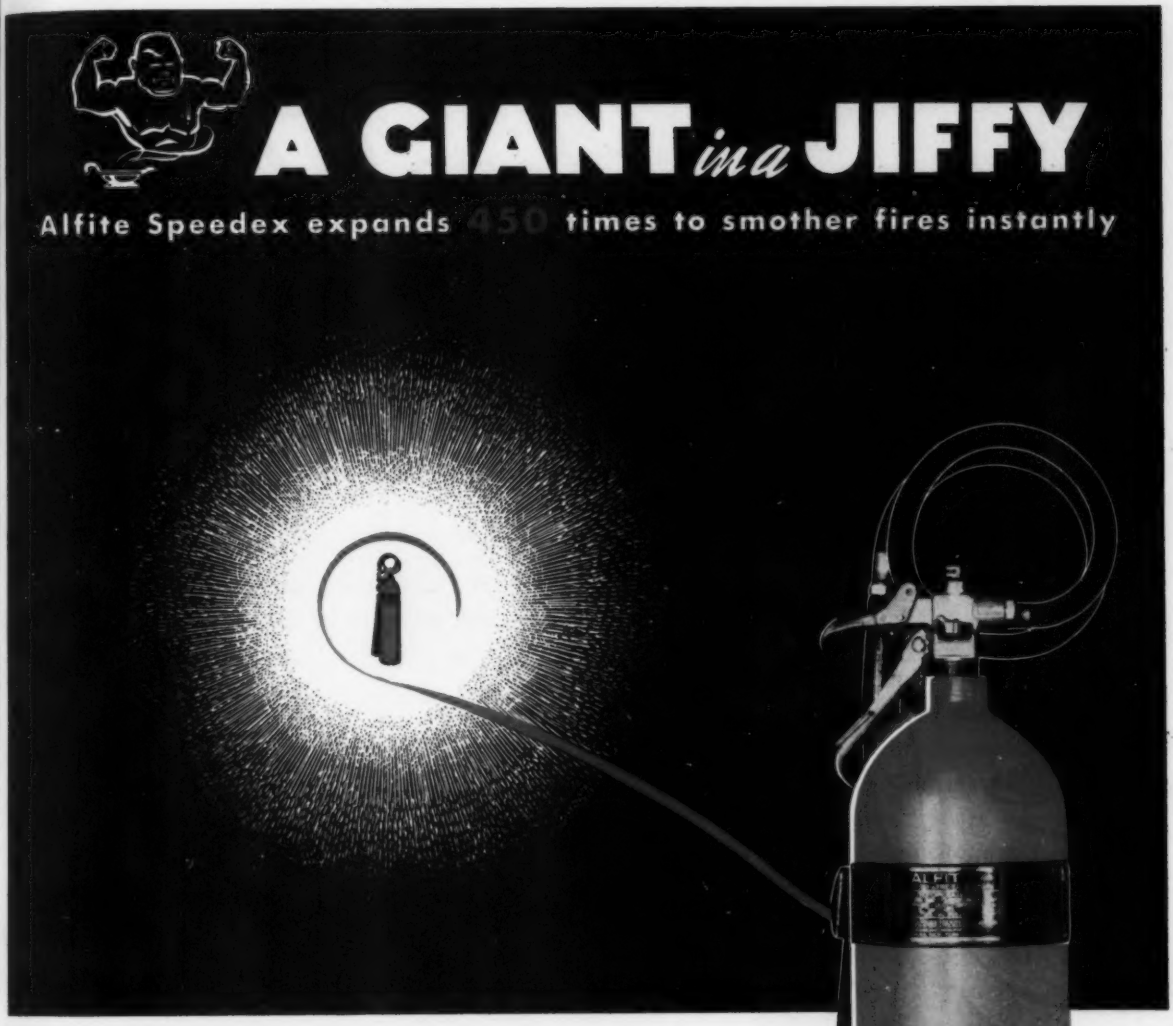
OFFERED IN FOUR STYLES

Style 500 • • *with four inlets.*
Style 501 • • *with three inlets as illustrated.*
Style 500MT • *with four inlets having handwheel control.*
Style 501MT • *with three inlets having handwheel control.*

AKRON BRASS
FIRE FIGHTING EQUIPMENT

A GIANT *in a* JIFFY

Alfite Speedex expands 450 times to smother fires instantly



ALFITE *SPEEDEX FIRE EXTINGUISHERS*

The instant the lever is pressed an avalanche of stored-up fire-smothering Alfite carbon dioxide snuffs out flammable liquid or electrical fires.

A giant in a jiffy . . . Alfite Speedex Fire Extinguishers expand 450 times their stored volume to give you quick and positive protection. They are easy to use and easy to service. They only occupy a floor space less than a small waste paper basket.

Write for Alfite literature describing the new Speedex models.

AMERICAN-LAFRANCE-FOAMITE CORPORATION

ELMIRA, N. Y., U. S. A.

Fire Chief

Are you a Member of

The

INTERNATIONAL ASSOCIATION OF FIRE CHIEFS?

For 62 years the IAFC has striven to promote the interests of the Fire Service of the United States and Canada — it has come to exert a strong influence in National, State and Local affairs pertaining to the Service.

Post-War problems affecting every Fire Department, yes, affecting every fireman, will be difficult and be more effectively dealt with collectively than individually — the IAFC needs the help of every Fire Chief.

Through newspapers and radio, through personal contact with Government, State and Provincial Officials, the IAFC will continue to present the case of the Fire Service

For — More Modern Equipment
More Adequate Fire Regulations
Better Fire Service Conditions

This Is Your Association

If you are not a member, write for an Application Blank to

Fred Shepperd, *Engineer-Manager*
International Association of Fire Chiefs

24 West 40th Street
New York 18, N. Y.

In Your Own Interest
WRITE TODAY!

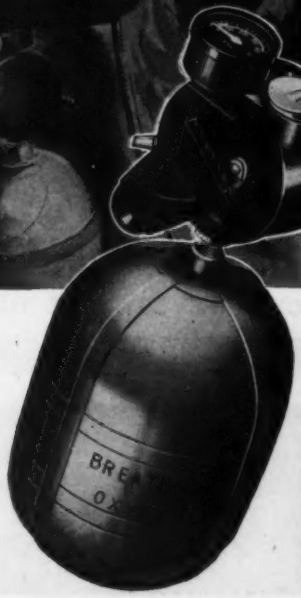
This Space Donated By

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS AND MEADE STREETS • PITTSBURGH 8, PA.
District Representatives in Principal Cities
In Canada: MINE SAFETY APPLIANCES COMPANY OF CANADA, Ltd.
TORONTO, MONTREAL, VANCOUVER, CALGARY, NEW GLASGOW, N.S.

Preview of Post-War Life-Protection

★ Fliers whose missons carry them upwards of 6 miles into the stratosphere literally "travel on their lungs." And Scott ***Air-Pak*** (Portable Oxygen) Equipment enables them to carry on their duties with continuous respiration protection. Commonly called "walk around bottles", Scott Air-Pak units provide the requisite oxygen for the intervals when the mask is disconnected from the main oxygen line, and for emergency service when the main oxygen supply is destroyed in combat.

A combat necessity! Yet inherent in Scott Air-Pak equipment are the safety principles, the design, the practical know-how which point to important industrial applications in days to come. Plans are already in the making! Look to Scott for tomorrow's portable oxygen equipment.



Scott Air-Pak Unit—a light-weight, portable oxygen cylinder and precision regulator of the demand type —in active service on many fronts.

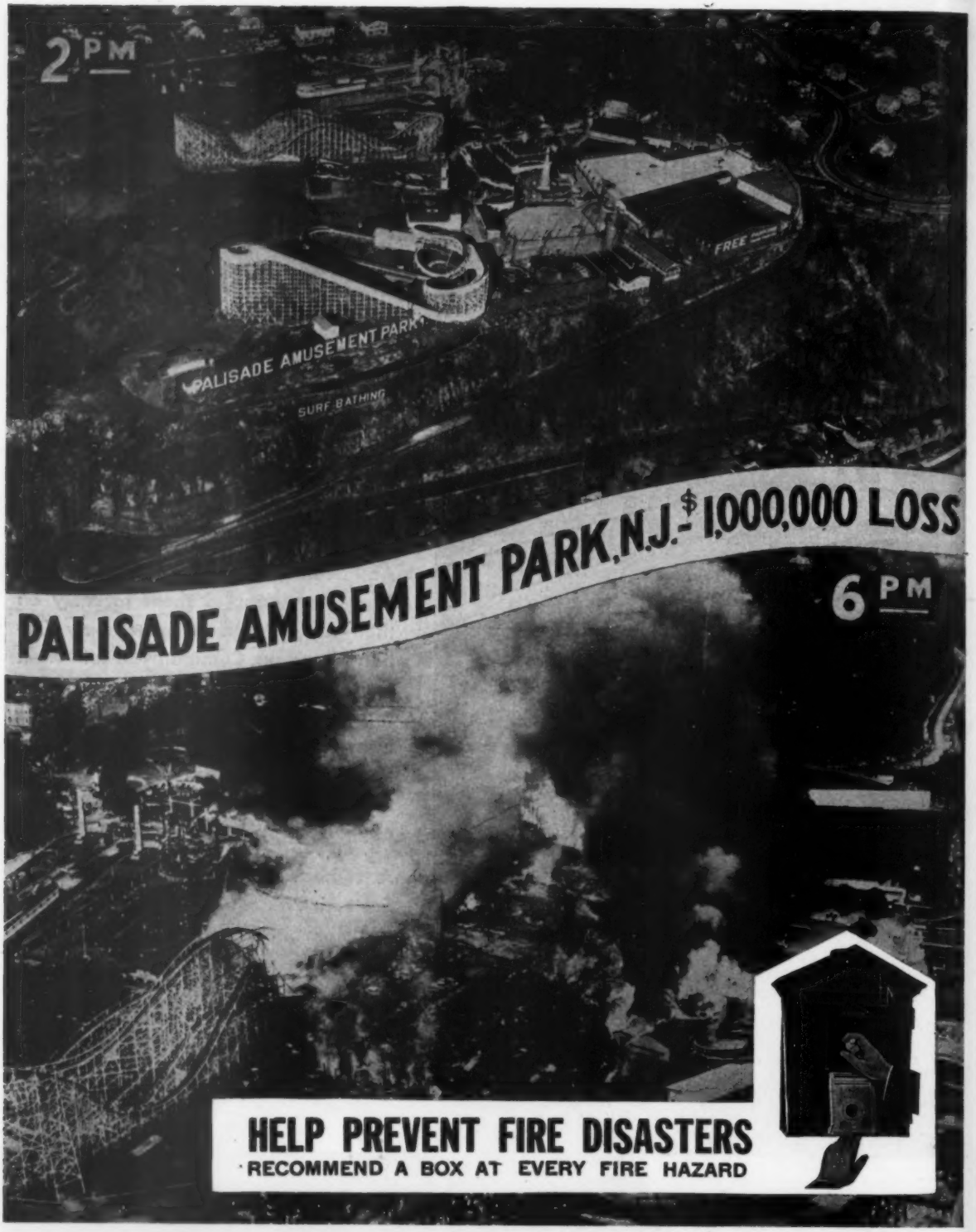
SAFETY EQUIPMENT DIVISION

ARMY E NAVY

Scott

AVIATION CORPORATION

Lancaster, N. Y., U. S. A.



THE GAMEWELL COMPANY
Newton Upper Falls, Massachusetts
In Canada: Northern Electric Company, Ltd., Montreal

Please mention FIRE ENGINEERING *when writing advertisers*

FIRE ENGINEERING

JULY, 1944 VOL. 98, NO. 7

With the Editor

Today Is the Tomorrow of Yesterday! Not every American municipal fire department is sitting back, waiting to see what is going to eventuate in the way of new fire fighting and training techniques, and new apparatus and equipment after the war.

Many are anticipating it and have already seized upon the ideas and methods developed by the Armed Forces and are shaping them to their own requirements.

They not only have plans for post-war improvements all along the line, but they have dated many of those plans as of yesterday. They are instituting the improvements just as rapidly as the government releases material, and their own municipalities make funds available.

Such a fire department is that of New Haven. Our readers have no doubt noticed not infrequent reference to this organization in the past twelve months. Now, in this issue, we describe another innovation in fire fighting technique which Chief Paul P. Heinz and his men have developed and which is most interesting. The use of fog streams from ladder pipes seems to hold possibilities.

Deadly Souvenirs A short while ago a "dud" bazooka shell, that had been owned by an eleven-year-old boy for almost a year, exploded and injured six boys, three of them seriously.

As a result of this and other accidents involving "war souvenirs", the War Department has issued general warnings to all military personnel that "no explosive items may be brought or mailed back to the United States from overseas." Last summer the War Shipping Administration also put into effect legislation meant to control the bringing of war combat relics to this country by crew members.

In spite of these commendable safety regulations, serious war souvenir accidents have continued throughout the country. Some of these accidents, no doubt, have been the result of smuggling into the country souvenirs by servicemen and merchant seamen having the kindly but dangerous idea of pleasing their families or friends with what they may believe to be unloaded, or harmless ammunition.

In December last, the Navy Department cautioned that enemy ordnance thought to be harmless has caused many deaths and injuries, and that such souvenirs, as well as allied ones, should not be kept in homes but should be turned over to the police. The Department offers the suggestion that some apparently harmless relics may be unexploded enemy booby traps.

The warnings of the Armed Forces must be taken seriously. The fire service should cooperate with law and order agencies to discourage the indiscriminate handling of war souvenirs.

I.A.F.C. Out for New Members The International Association of Fire Chiefs is at present engaged in a drive for new members. Although the campaign is only a month old, over five hundred new members have been enrolled.

The Association deserves the support of the fire service, for it alone of all Associations is unselfishly working for the advancement of the profession.

While active membership is available only to Fire Chiefs, Chiefs of Fire Patrols and State Fire Marshals, any member of a fire department can become an Associate Member in the organization, and will receive all of the instructive material issued by the I. A. F. C.

The goal set for this year is 2,000 new members. Applications for membership may be secured at Headquarters Office, I. A. F. C., 24 West 40 Street, New York 18, New York.

Fred Sheppard

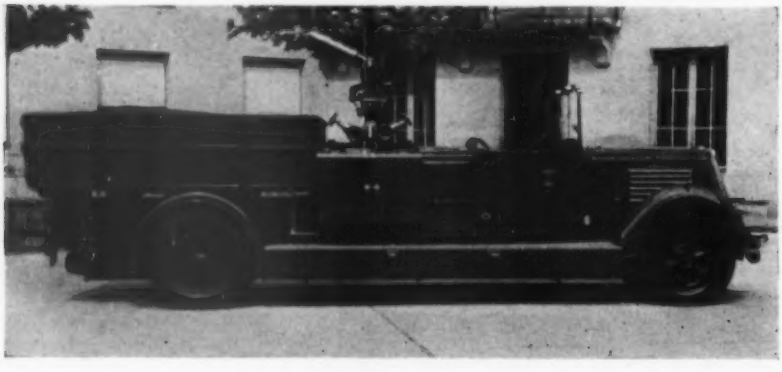
The Paris Fire Brigade

Before and After the Liberation

By A. H. SELLECK*

PARIS has a fire brigade that is perhaps different from any other continental brigade. Basically its principles of fire fighting are the same, as fire fighting is universally standard. Its organization is unique and different.

The Parisian fire force, unlike most fire forces, is a military and not a civil organization. During the reign of Napoleon the Third, the Minister of War ordered an infantry regiment into the City of Paris for the purpose of fire fighting. To this day it is called "Regiment De Sapeur-Pompier." The word "pompier" is common to the American fire service as the name of our scaling ladder. In French, however it means "fireman."



Hose Wagon with Deck Gun.

The regiment is headed by a colonel, who corresponds to our chief of department. Under the colonel are his deputy chiefs (lt. colonels) and continuing down the line to the privates. The entire chain of command breaks down and can be compared to our fire service as follows: Headquarters, with the usual administrative branches. Next the city is split up into four battalions: North, South, East and West. In command of each battalion, which actually corresponds to our division, is a commandant (major). Beyond this are three fire companies under each battalion and three fire posts under each company. Here is one of the differences between the two services. Their fire companies and posts are both the same as our companies and have apparatus for responding. The companies are commanded by captains or lieutenants and the fire posts are commanded by warrant officers or sergeants. In short then, their battalions are like our divisions and the companies would correspond to our battalions; the fire posts, to our companies.

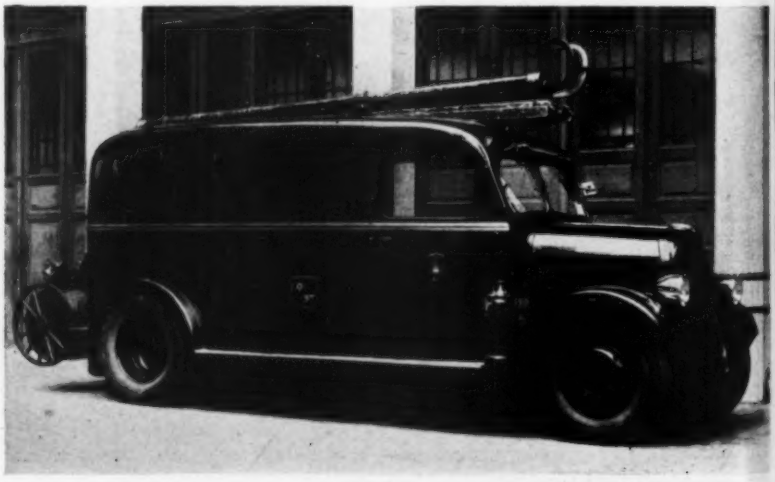
In headquarters, under the administrative branches, are a few services that we do not have. For instance, because theirs is a military organization, there is a mail service to handle all the mail of the regiment. Also under headquarters is a gymnastic service, a recruiting service and, lastly and most important, the technical service.

Under this office come a multitude of jobs, among them being the printing shop photography and publications for the entire brigade. The maintenance department handles clothing repair, automotive repair, property maintenance, fire alarm telegraph bureau, fire inspection and arson investigations. All these come under the technical service.

The ranks of the regiment are filled by the recruiting service. The requirements are that the applicant be between 18-21 years of age, which is younger than any of the age limits in the states. Next, there is a very stiff physical examination, followed by a mental examination. If he passes these, he is accepted and sent to a training company for four months. At the end of the four months he has two more hurdles to cross before he is finally accepted: First, a rigid gymnastic test and, second, a firefighting test. Successful completion of these brings him an assignment to a fire company or post. His starting pay is 450 francs a month for the first year, 570 the second, and 2800 francs for his third year. At the present rate of exchange his pay in American dollars would be 10, 11, 46 dollars per month. Of course he is given his quarters, rations and clothing. At the end of three years, he may reenlist for from one to five years, as he wishes.

At the end of fifteen years, he is eligible for retirement. The reason for the big jump in pay in the third year is because in France two years military service is compulsory for all youth and the third year jump is sort of an inducement to stay on. At present, however, service is for the duration. At any time during his service, the soldier-fireman is apt to be transferred to any other branch of the army, either at his own request or by orders. The latter, however, is seldom done. At all times he is subject to military discipline and court martial.

Now to the fire service itself: The types of apparatus found are similar to those used in the United States. The primary type is the first aid car, a small capacity pump with a 150-gallon booster tank and reel. This wagon



Sedan Type Pumper of Engine Co. No. 5. Capacity, 750 G. P. M.

*Mr. Selleck, a member of the U. S. Army, was deeply interested in the fire service before entering the nation's armed forces. He has made a study of many European fire departments while abroad. This first article describes the Paris, France, Fire Brigade.

carries a crew of five men, one sergeant, a corporal, and two privates and a driver. This car is used for small fires, such as chimney, automobile, etc., and is first due at most boxes. Next is a larger pump of the sedan type with a larger pump and 1000 feet of hose, and the usual variety of equipment found in our engine companies. Last of all is the ladder truck, always an aerial of 100' (45 meters) or better. The aerial is usually of Metz manufacture, powered and mounted on some standard French chassis. The Metz is a German made ladder and is used extensively in England as well. Then there are the usual special appliances, such as the rescue, smoke ejector, searchlight and crane trucks.

Response Varies

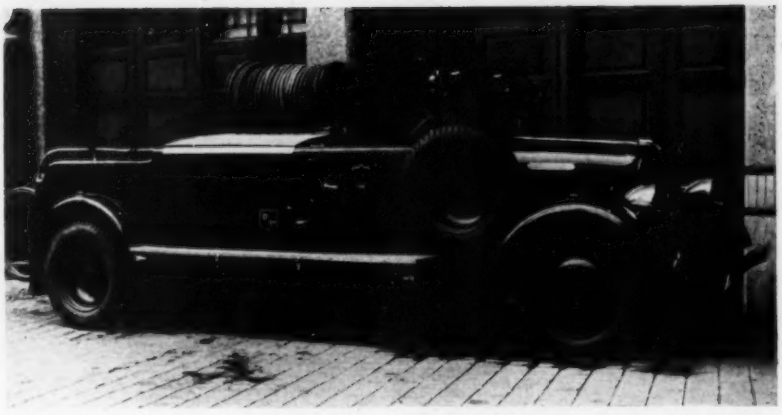
The response to fires varies with the size of the fire. To start with, when the glass in an avertisser (fire-box) is broken, a signal is transmitted to the nearest station. That alone is not sufficient; the alarm operator asks the correspondent to describe the fire to him by way of a built-in phone in the box. The correspondent cannot touch this phone. Based on the description given, the operator dispatches the appropriate number and types of apparatus to the scene. If, however, the person sending the alarm fails to remain at the box, one piece, the first aid car, is despatched. This is a disadvantage, compared with the American system of automatic coverage of every box, in that the average person reporting a fire is too excited and nervous to accurately describe a scene. The only automatic coverage they have is to private boxes referred to as classified establishments. These correspond to our ADT or similar type boxes. The coverage usually is three first aid cars, three pumps, three ladders and a rescue.

The command at fires is by the senior ranking officer or non-commissioned officer of the responding apparatus, that is until the fire reaches such proportions that three or more large nozzles are used. At this time battalion headquarters is notified and a batallion commander takes over. As soon as possible after arriving at the scene of a fire, the officer in charge notifies fire alarm headquarters as to the type and size and disposition of the blaze. Multiple alarms do not exist. Additional help is summoned by the officer, as needed.

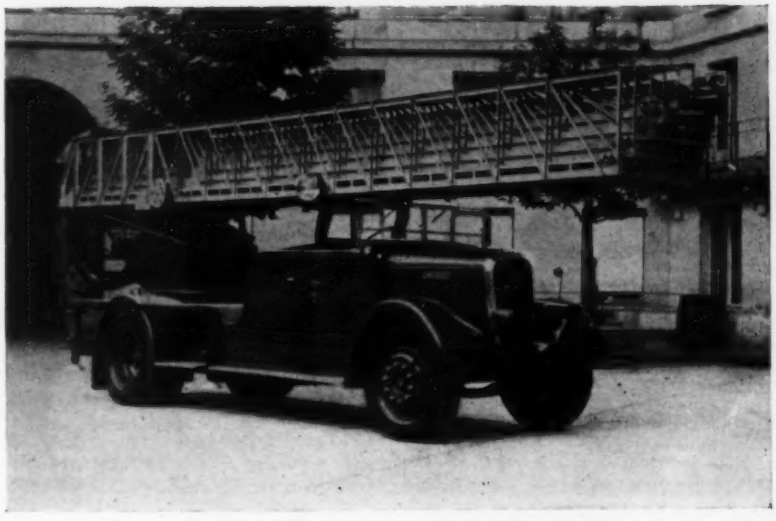
During the occupation of France by Germany, a few changes were made but for the most part, except for supervision by an S. S. or Gestapo officer, they were left to operate by themselves. One major and interesting change to note was the sending of whole detachments of the regiment to port cities. Two of these detachments operated in Cherbourg and Le Havre. Although more than 150 miles from Paris they were actually part of the Parisian fire brigade.

Now it can be told of a few amusing incidents that took place during the occupation. In one of the port cities controlled by the regiment from Paris, after an air raid by the Allies prior to D-Day, a large concentration of Nazi fuel was left alight. The regiment was summoned and upon arrival contacted the Nazi port commander, who, in this case was a German naval officer. The

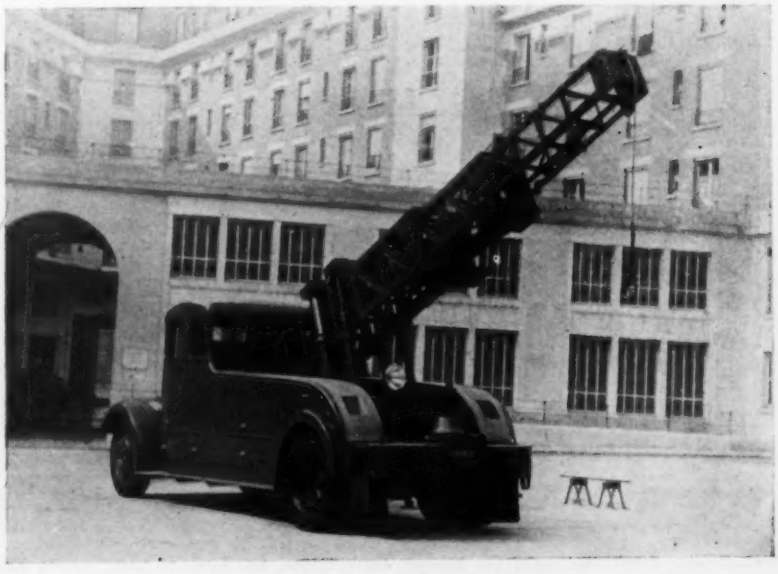
(*Continued on page* 474)



First Aid Truck of Engine Co. No. 5.



Multi-Section Aerial Ladder. Fully Extended 135 Feet.



Fire Department Crane Truck for Demolition, Rescue and Service Work.

Porto Rico Fire Wipes Out Half of Rural Community

Lack of Protection Gives Fire Opportunity to Gain Headway; Insular Forces Do Good Work

By RAUL GANDARA
Chief, Insular Fire Service, Porto Rico

FIRE destroyed approximately half of the Porto Rican town of Lares early this year. This community had a population of about four thousand, and was located in the center of an agricultural area.

It has been difficult to determine the exact time when the fire started; investigation shows it occurred between 11:30 A.M. and 11:45 A.M. The fire began at a home located at the northwestern side of the town of Lares, when a hard wind was blowing from that direction.

In the town of Lares there is no fire station and no fire-fighting equipment and, therefore, the fire raged for an hour before anything was done to check it, as the first pumper arrived at 12:30 P.M.

The first fire truck to arrive at Lares came from the Insular Fire Service Station at San Sebastian. This is a 500 gallon-per-minute pumper equipped with 700 ft. 2½" hose. Two firemen came with the truck, connected it to hydrant No. 1 and delivered two streams towards the southeastern part of the burning area as shown in the diagram herewith. They continued working without interruption until 8:30 A.M. of February 3, 1945.

Corrugated Sheet Iron, Used for Roofing, Fairly Covers the Ruins of Lares, Puerto Rico, Following Fire.

The second pumper to arrive was the Insular Fire Service Truck No. 15, stationed at Aguadilla, which arrived at Lares at 12:45 P.M. and delivered four streams from hydrant No. 2. These streams prevented the fire from spreading to the western side of the town. This pumper worked continuously through the afternoon of February 2nd up to 12:30 A.M. of February 3rd. District Chief Rafael Nadal Grau arrived with his fire truck and immediately assummed command of all firemen and equipment. In his truck also came eight firemen from Aguadilla and approximately 1500 feet 2½" hose and 300 feet 1¼" hose..

The third fire truck to arrive was the Insular Fire Service Truck No. 14, stationed at Arecibo. District Chief from Arecibo, José R. Adorno, arrived in this truck at 12:45 P.M. with six firemen and 1500 feet 2½" hose. He immediately hooked up to hydrant No. 3 and delivered three 2½" streams at the northwestern part of the town toward which side the fire was creeping. These three streams prevented the fire from causing great damage. They were kept working up to 9:30 P.M. when I ordered them to be changed toward the middle of the burned area for overhauling purposes.

The fourth fire truck to arrive was the Arecibo Municipal Fire Department Truck which is a 400 gallon-per-minute pumper and arrived at 12:55 P.M. On this pumper was Chief De la Rosa with about 12 municipal firemen. They

worked from hydrant No. 4 and attacked the fire from Colón Street with two lines.

The fifth fire truck to arrive was the fire truck from Punta Borinquen Air Base, a 500 gallon-per-minute fire truck. It arrived at 1:30 P.M. and worked up to 5:15 P.M. Chief Hamilton came in this truck with three army firemen. They worked from hydrant No. 5 with two lines and attacked the fire from Colón Street toward the right hand side.

As soon as I arrived at Lares at 3:00 P.M., I assumed command of all the firemen and equipment. I ordered the two lines from San José Street to be brought upstairs into the City Hall Building, which is an old wooden building and which was beginning to burn. The wind was blowing in this direction. After working over two hours to save this building, we finally succeeded and were able to check the fire in this area. When the fire was under control, I gave the order to move pumper No. 1 to hydrant No. 6 from where it continued working through the night up to 8:30 A.M. of the next morning. Due to the efforts of the Aguadilla and Arecibo brigades, only three more houses burned after their arrival at the scene of the fire.

About 4000 feet 2½" hose and 400 feet 1½" hose from the Insular Fire Service were used in this fire. Because of the severe strain that this hose was subjected to, several lengths burst. Approximately 220 gallons of gasoline were used by our fire-trucks and chief's car.

Two firemen were slightly injured, suffering burns of minor importance, although one had to be hospitalized.

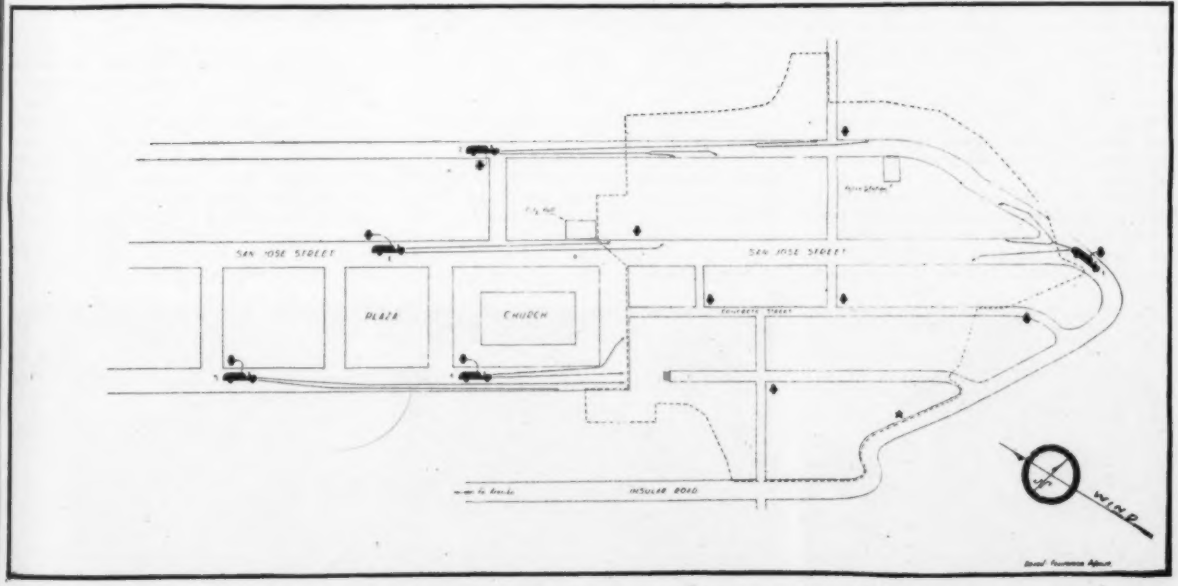
In the part of the town where the fire started, the houses were built very close to one another, making it extremely difficult to make a quick survey of the houses burned. Up to the present time we have estimated that 145 houses actually burned down completely and eight were torn down in order to help check the fire.

According to the report submitted by District Chief Nadal, the losses in this fire amount to about $273,514.00.

View of Fire Area of Lares, Puerto Rico.

As a precaution, several lengths of hose were left at Lares and Aguadilla's District Chief Nadal made daily inspection.

I made a personal inspection of the burned area in the afternoon of February the 6th and found that the fire was completely extinguished, there being no fear that it may rekindle.



Lares Fire Started Feb. 2, 1945, at 11:30 A.M.—Extinguished Feb. 3, 1945, at 8:30 A.M.

Fire Trucks	Size	Arrived	Left
1. 1st Fire Truck to arrive—Insular Fire Service from San Sebastian	500 GPM	12:30 P.M.	8:30 A.M. Feb. 3
2. 2nd Fire Truck to arrive—Insular Fire Service from Aquadilla	500 GPM	12:45 P.M.	12:30 A.M. Feb. 3
3. 3rd Fire Truck to arrive—Insular Fire Service from Arecibo	500 GPM	12:50 P.M.	9:30 P.M.
4. 4th Fire Truck to arrive—Arecibo Municipal Fire Department	400 GPM	1:30 P.M.	5:30 P.M.
5. 5th Fire Truck to arrive—Borinquen Field Air Base	500 GPM	1:30 P.M.	5:15 P.M.

*Here fire started.
---------- Area burned.

Fire Protection Provided for War-Impacted Communities

By HARRY HEWES

MORE than 230 war public works projects to provide fire fighting facilities in war-impacted communities had been approved by Major General Philip B. Fleming, Federal Works Administrator, up to December 31, 1944.

These involved Lanham Act Allotments aggregating $2,955,428 for construction of stations or purchase of equipment, and additional contributions of $1,349,453 to assist in the cost of maintenance and operation of fire and police forces. Large grants also were made for installing and extending water works systems.

As towns and cities reached boom proportions in the heavy immigrations of workers to man the new war plants, and new public and private housing was built, the need for fire protection became acute. A fire in the housing communities or in the war plants might seriously impede the war effort.

In many localities existing fire protection was inadequate. Stations were too far away, access was slow and devious where new streets were not yet laid out, much equipment was old and some of it was obsolete, and many trained firemen had gone to war.

Other utilities and services, sufficient for peace time, also were over-burdened and sometimes swamped—water and sewer services, schools, hospitals and other health facilities, access roads, recreation centers. And after awhile as manpower shortage became acute and wives and mothers hung aprons on kitchen doors and donned the slacks of war plant workers, there was the need for war nurseries for their young children.

When communities found their problems resulted from conditions growing out of the war, they turned for help to the Federal Government. Early in America's defense effort the Federal Works Agency was charged with the administration of funds set up by Congress under the Lanham Act to provide essential community facilities in those war-impacted communities where local governments faced depleted treasuries and sheer pressure of population had swamped such facilities.

In justifying allotments for the fire protection projects, General Fleming studied reports on war-induced need from the National Board of Fire Underwriters, and from military commanders and war plant operators in the congested areas. These supplemented the applications of the community officials.

Population Doubled

In 1940 San Diego was a "Navy Town" of about 205,000 people, already feeling the pressure of the defense effort and avidly scanning the news from the European war fronts, but fairly contented on the whole with the agreeable way of life the community afforded. By 1944 the city had sprawled to adjacent hills and valleys and along the highways, and reported a population of approximately 400,000. More than 17,000 housing units for workers had been built and some are still building. One of them, handsome Linda Vista on Kearney Mesa, have facilities for 5,000 families, churches, schools, playgrounds, model marketing centers, fire and police protection. It was the wide flat top of an untenanted, bare and windswept hill four years before.

Bremerton, in Washington, was a quiet, contented town in 1940 an hour's ferry ride from Seattle, and most of its 15,134 inhabitants were dependent for their economic existence on the Puget Sound Navy Yard. Today the city houses 100,000 persons, spread over 2,227 acres and overflowing into populous Port Orchard, a community that grew from 1,560 to 15,000 in 2½ years of war. Orchard Heights is just at hand.

In 1940 Bremerton's city budget and emergency appropriations covering its fire department amounted to $25,234; in 1944 appropriations totaled $249,808. Naturally enough, Bremerton, on the receiving section of those end-results over which it had no control, needed Federal assistance, and this was forthcoming, premised on its manifest war-connected need.

During the day-and-night rush to provide dwellings for the swelling army of in-migrant workers fire broke out in one of the unfinished duration dormitories. Nineteen firemen were available to fight the flames. This was on August 12, 1942, and by the next morning three of the dormitories that soon would have housed 316 men, and a completed building occupied by 67 workers, were in ashes. Mayor "Lum" Kean believed the flames had been confined to the four buildings only because the Federal Works Agency had acquired and sent to Bremerton fire fighting equipment including Ford pumpers.

Three Stations Built in Bremerton

With more than $400,000 in FWA grants three new fire-stations, manned by a two-platoon system of paid firemen, were built in strategic locations and adequately equipped to meet any foreseeable emergency. As it was expected that Bremerton would retain a considerable residual post-war population these stations are permanent buildings. In Port Orchard the new fire station and the postoffice were designed as a joint structure.

Federal Works Agency Photos

The Old and the New

1908 fire house in Sidney, N. Y., housing ancient apparatus replaced by this modern house and equipment through FWA allotment.

Four years ago Vanport, Oregon's second city, was not even on the map. The world's largest housing project was built by the Federal Public Housing Authority on cow pastures and truck farms a few miles out of Portland, in approximately 11 months. It houses 34,000 persons, workers in the adjacent Kaiser shipyards and their families. Three fire stations equipped with five 500 gpm pumpers, a ladder truck, tank wagon and other apparatus are manned by a paid personnel of 68, including three operators and two inspectors, and an automatic telephone alarm system has been installed. Later when East Vanport was built Federal funds were available for still another fire station and its equipment.

On the other side of the Continent in busy Bridgeport, Conn., FWA funds were made available to augment city money for the construction of two new fire houses to protect areas covered with new housing. In the Newport News-Portsmouth-Hampton region of Virginia, center of tremendous shipbuilding activity, FWA grants provided for several stations and equipment, and Arlington, Va., in the Washington, D. C., Metropolitan District across the Potomac, where the influx of workers to the war-time Capital resulted in the construction of new apartment residence units, FWA allotted funds for an aerial truck made necessary by the tall buildings which were often built on terraces.

Some Stations Temporary

An over-all picture of FWA assistance toward fire protection for war-impacted communities must include the consideration that many of these congested areas may not expect to retain the war working population and military personnel that brought Federal intervention in their problems. A considerable number of the new fire stations are temporary duration buildings, not intended for permanent use. The War Production Board's criteria on materials also limited the builders and appeared to sharpen the ingenuity of architects and engineers. There are many instances where criteria-limited war-time standards appear to have marked new paths for the days when normal construction can begin again.

Federal Works Agency grants for construction or improvements of fire stations, without including similar facilities provided on the sites of housing projects or at military installations by other Government agencies, have been made to communities in twenty-one states and Alaska.

Federal Works Agency Photo

FWA Fire Station Near Sheridan Park Housing Community, Bremerton, Wash., Has 4,570 Sq. Ft. on First Floor, 1,386 Sq. Ft. in Basement.

Radio Holds Down Fire Losses

Installation of two-way radio communication on his apparatus is credited by Chief Frank P. Walsh, Hackensack, N. J., with having been responsible in very large measure the past Spring for prevention of widespread fire losses in his City.

"Our department," the chief reports, "has received a number of very pleasant compliments on the efficiency with which it has met emergencies where it has been confronted by several alarms received within a few minutes of one another, but I am frank to admit that neither I nor any other of my officers could have done the job if we had not had radio installations for instant communication.

"This is one case in which the money of the City was wisely spent and already been more than justified by its results. With limited personnel and increasing fire hazards arising from the fact that we cannot possibly provide normal fire prevention inspections and supervision, our problem has become one of getting the most men and equipment possible, to the point where they are most needed when more than one fire is in progress at one time. We are able to do that today because radio permits intercommunication between officers in command at each fire scene and we know at all times what the problems are to be faced.

"An excellent example of what this means was afforded this week when sparks from meadow blazes near the Municipal Bus Terminal ignited roofs of two houses some blocks north. We were able to determine the extent of apparatus required and dispatch it without allowing the first fire to get further beyond control and provide adequate coverage at all points.

"There have been various other occasions when, by use of radio communication, men have been withdrawn from a minor blaze at one point to assist in handling a more important one elsewhere, and the system also permits communication instantly with headquarters when necessary, or with the police."

Dayton Fire Department Bulletin

Dayton, Ohio, is one of the cities that is devoting thought and effort to reducing industrial fire losses. Many other cities might follow the example of its Fire Department, Joseph A. Kirby, Chief, and R. B. Kurfiss, Chief Inspector, Bureau of Fire Prevention, in this respect.

One way in which the Bureau of Fire Prevention of the Dayton Fire Department keeps in touch with all local industries is by means of an *"Industrial Bulletin."*

No. 4 of these bulletins, dated January 9, 1945 is typical. It is simply but neatly printed, and starts off by recounting the industrial fire losses of the city for 1944. Although Dayton finished the last three months of the year without a serious fire in one of her local industries the author says: "we are not bragging about the loss record in our industries for the year 1944 because 7% of the total number in building fires last year occurred in the industrial plants. These 63 fires caused a total loss of $282,117.45 which is 58% of all the losses in the city . . ."

The bulletin has chapters on "Prevention of Fire," "Protection of Life," "Restricting the Spread of Fire," "Fire Extinguishment" and "Minimizing Loss." A feature is a statistical table showing all fires and losses for the year, and the last month, in eight manufacturing classes. Fires in "Metal Workers" led all groups with a total of 26, and loss of $199,331.10.

Federal Works Agency Photo

FWA Sub-Station for Brunswick, Ga., Fire Department. Cost $18,000.

Col. Brayton Returns to Texas A. & M.

After serving four years in the Army as Lt. Colonel of the Chemical Warfare Service, H. R. Brayton has returned to the Department of Chemistry of the Agricultural and Mechanical College of Texas, College Station, Texas.

NEW TREND IN FOG APPLICATION SHOWS PROMISE AT NEW HAVEN

Large Fog Nozzles on Hose Wagon and Aerial Ladder Quickly Control Hot Fires

By Roi B. Woolley

MUCH has been written and said about the impact of wartime fire defense, as practiced by the Army and Navy, on our own municipal fire service after the war.

No one questions the influence that the methods and techniques developed by the Navy, for example, in fighting shipboard and Class B fires, will have on our post-war municipal fire suppression. In fact, that influence has already shown itself. At least one city has taken a leaf from the Navy's training techniques and installed a technical training ground similar in many respects to the Navy Damage Control Fire Schools developed by Commander Harold Burke. That city is New Haven, Connecticut, Paul P. Heinz, Fire Chief.

Not content with the orthodox "drill school", with its six-story "drill tower", Chief Heinz some time ago laid out an experimental and training yard on the waterfront of his city, patterned in many respects after one of Commander Burke's navy schools. Details of the New Haven yard and the "navy type" training given members of the New Haven Fire Department will be covered in a subsequent issue of Fire Engineering; this is the story of an individual test, or series of experiments, conducted by Chief Heinz, in an effort to bring to bear upon a fire of some magnitude water-fog in greater volume and intensity than has heretofore been done in municipal fire-fighting.*

Fig. 1. Mobile Unit with Two 500 G. P. M. Fog Heads Mounted on Deck Guns, Approaching Fire, 100 Lbs. Nozzle Pressure.

What inspired Chief Heinz to conduct these experiments were the experiences in fighting the N. Y., N. H. & H. R.R. gasoline spill fire in his city on November 18, 1944 (Fire Engineering, December, 1944, P. 873). Although this fire justified Chief Heinz's foresight in equipping his entire department with fog nozzles, and appliances, it suggested to him the need of further experiments in the application of larger fog volume on such fires, and at the same time, the possible adaptation of standard fire department deluge and heavy duty appliances for such fog fire fighting.

For his initial experiments, Chief Heinz utilized "fog deluge" turret truck which he had built out of an old hose truck and upon which he had installed fog nozzles and applicators of different sizes. Working with a manufacturer of fog equipment, Chief Heinz was able to secure a fog head which on tests, mounted on a special gated fitting to enable it to be attached to one of the turret pipes, delivered approximately 500 gpm at 100 lbs. pressure.

Tests on specimen fires of varying extent and degree encouraged the Chief to greater efforts, which culminated in a number of large-scale experiments, two of which are described herewith.

Volume Fog Extinguishes Large Area Fire

The first of these tests involved the operation of a 1000-gallon pumper, supplying the deluge fog truck mounting two turret guns each equipped with 500 gpm fog heads supplied through four 2½-inch lines.

Located in the training ground are three receptacles or tanks of varying type and size. They consist of (1) a

(*Continued on page* 468)

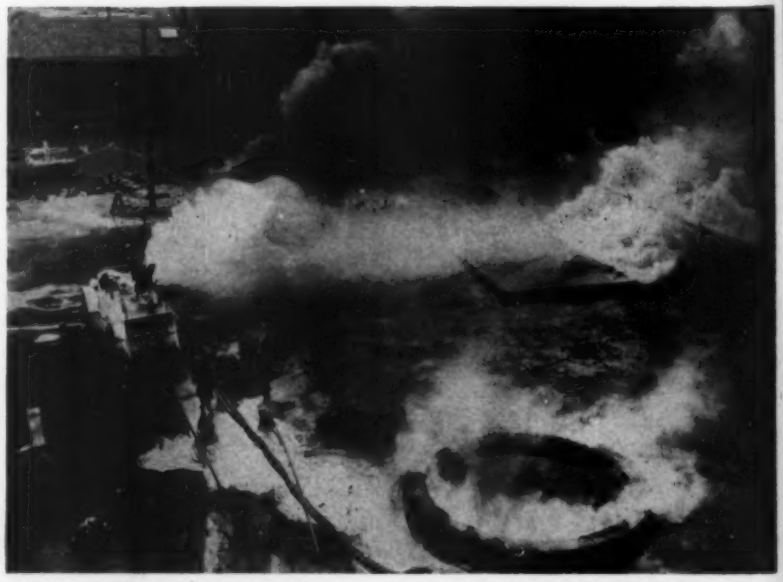


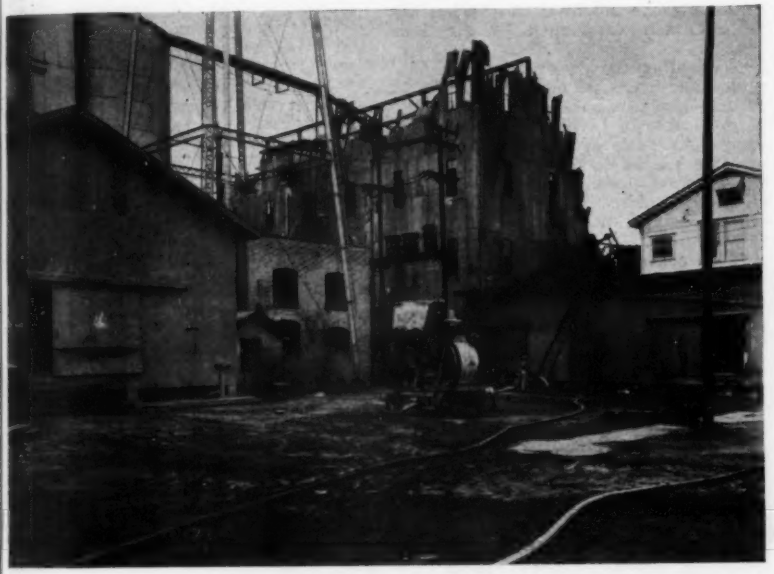
Fig. 2. The Fire as It Appeared 30 Seconds After Fog Went Into Operation. Fire Completely Extinguished in Approximately 35 Seconds.

*The Navy has for some time been experimenting with "heavy-duty" fog appliances. Tex Bradford, famed oil-well fire fighter, also has made use of such equipment.

RICE MILL FIRE EXTINGUISHED AFTER BURNING FOR FIVE DAYS

Efficient Tactics Overcome Water Shortage; Hold Losses to Minimum

ON Friday, March 2, 1945, fire, starting from unknown causes in the rice mill of the Arkansas Rice Growers Cooperative Association, threatened the entire plant and gave the Stuttgart Fire Department and that of the nearby Stuttgart Army Air Field, which responded on a call for aid, a long, hard fight. The loss was $250,000; salvage amounting to $25,000 was effected.



Overhauling Fire in Rice Bins, Arkansas Rice Growers Cooperative Association Plant, Stuttgart, Ark.

As illustrated in the diagram, the mill buildings are spread over a large area, occupying most of one city block and parts of two others—all told, in excess of 80,000 square feet. Exposures in the form of lumber yards, warehouses and commercial establishments on the north and west increased the fire hazard.

Delayed Alarm

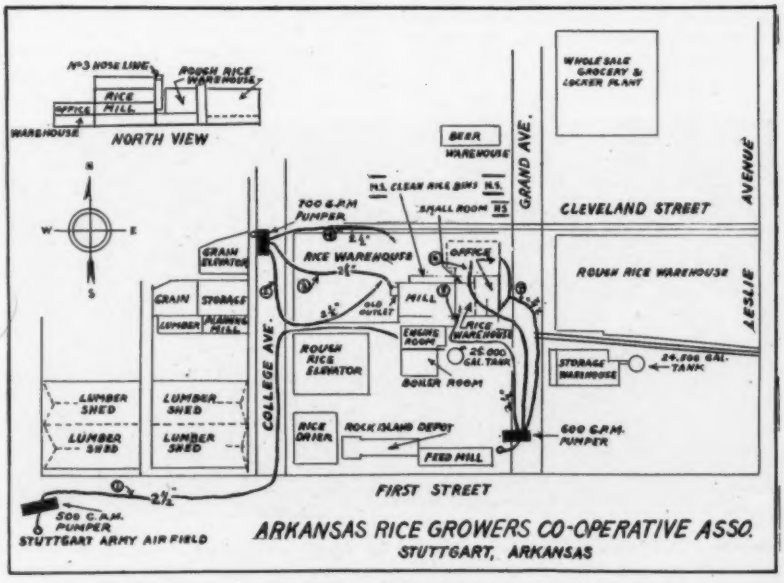
The alarm, believed delayed from 30 to 40 minutes, was received at fire headquarters at 10:50 P.M. Alarms are relayed by the telephone operator at the local Stuttgart exchange to the department, which is manned by four full-time, fourteen volunteers and twelve auxiliary firemen, the volunteers being notified by telephone if the alarm is made "general", which Chief J. W. Wimer, in charge, promptly did after sizing up the situation that confronted him.

Upon arriving he discovered that the fire was in the northwest corner of the mill. Apparently from its origin on the third floor, it had extended to the fourth, where it was discovered by two negro workmen. New bins had been built adjoining this corner of the main mill and the fire had worked into these bins, which were unsprinklered. The sprinklers on the mill floors were operating but were unable to prevent the extension of the fire to the fourth floor via the bins. According to Chief Wimer, the fire gained headway beyond control of the sprinkler system, and the corner of the mill, which was most heavily involved, was the first to fall, the collapse putting the sprinkler system out of commission in the entire plant, with consequent threat to all structures, and exposures.

At 11:05 P.M., Chief Wimer called all auxiliary firemen and requested aid of the Stuttgart Army Air Field Fire Department, which sent one 500 gpm pumper with standard equipment and 1000 feet of hose and four men in command of Chief Blevins and Captain C. W. Almond, who serves as a Stuttgart volunteer fireman on his off-shifts. The Air Field Department worked as one of the Stuttgart companies throughout the fire. It started pumping at 12:30 P.M. and was relieved at 5:30 A.M. Its arrival released the Stuttgart Department's third pumper for vitally important work in relieving the water shortage.

At the time of the fire, one of the wells of the municipal water works was undergoing repairs. Mr. George Brazil of the Arkansas Power & Light Co. was tightening the last terminal nut on the pump motor when informed of the fire. He immediately started the pump, raising the system to its full capacity of 1000 gpm. This supply proved inadequate as quickly as the third (Air Field) pumper went into action. Water reserves were dangerously low. The water commission wanted Chief Wimer to cut out some of his lines because they could not supply the necessary water. Chief Wimer, however, secured permission from two other rice mills in the city to by-pass their water back into the city mains which soon gave him ample water to operate six good streams and a deluge set with one and three-

(*Continued on page* 472)



Location of Hose Lines

No. 1 on 1¼-story engine room; No. 2 on 1-story warehouse; No. 3 on 4-story old rice drier; No. 4 on 1- and 2-story warehouse; Nos. 5 and 6 used deluge set for some time, then separated these lines and took one from 1st story over roof to roof of office, which is 2-story. No. 7 wyed to 1½-inch lines protecting exposures in offices upstairs and on ground floor.
NS indicates that there were no sprinklers.

Civilian Defense Passes

Effective June 30, 1945, the Office of Civilian Defense was abolished. Thus the agency which organized America's wartime civilian protection personnel passed into history. The order, signed by President Truman, transferred all property of the OCD to the Department of Commerce, and Mr. George Bonnstetter, who has been in charge of protective property since Colonel Edward L. White left the national office, will be transferred to the Department of Commerce, along with what is left of the property and records. The latter, it is said, will in time find their way to government Archives.

Even before June 30 many states had served notice on their civilian protection forces that the government had withdrawn its protection of communities in the event of accident or death to enrollees, and a number terminated all civilian defense operations. On May 27, New York's Mayor Fiorello LaGuardia forbade auxiliary firemen participating in any activities that might result in injuries, and on May 29, the Mayor officially said farewell to them in a mass ceremony at the City Hall Plaza. It is reported that there were nearly 30,000 auxiliary firemen at the time of disbandment. New York will continue its City Patrol Corps and the Nurses Aids—the only two remaining of the twenty civilian defense organizations set up in the city to deal with war emergencies.

Some states have signified their intention of continuing some sort of defense organizations as a protective measure against large scale disasters. In this connection many of the mutual aid programs inaugurated by the national Office of Civilian Defense, and for which special legislation was adopted, will be maintained with emphasis on the regular municipal emergency forces and the Red Cross.

In a number of communities auxiliary firemen and policemen have been absorbed by the regular forces. This is particularly true of communities having volunteer fire departments. As was to be expected, the volunteer departments have lost more men to the Armed Forces.

Future of OCD Property

Under date of June 21, 1945, the Department of Commerce issued the following notice relative to the functions and protective property of the OCD

"Pursuant to the provisions of R. S. 161 (5 U. S. C. 22), the functions and protective property of the Office of Civilian Defense, transferred to the Department of Commerce under Executive Order 9562, dated June 5, 1945 (10 F. R. 6639), shall be administered by the Office of Civilian Defense Property hereby established in the Department of Commerce, at the head of which shall be a Director appointed by the Secretary.

"Subject to the direction of the Secretary, and under the general supervision of the Under Secretary, the Director of the Office of Civilian Defense Property shall perform the functions and exercise the powers transferred to the Secretary of Commerce by Executive Order 9562, dated June 5, 1945, and all other functions that may be delegated to him.

"This order shall be effective July 1, 1945."

Indiana Holds First School for Arson Investigators

The first specialized training course for fire and police department personnel in the field of arson investigation was held at Purdue University on May 22, 23, and 24. State and municipal fire marshals and their deputies as well as many police officials were in attendance, representing no less than fourteen states and scores of cities. The course was sponsored jointly by the Indiana Fire Service Training Schools and the Public Service Institute of Purdue, and its marked success exceeded the fondest hopes of Messrs. J. L. Lingo, Francis Hartman, and Robert Hamm, who arranged and managed the program.

A highly significant milestone in the field of fire and police service training, the course was designed to acquaint these public officials with the problems incident to the detection, investigation, and prosecution of arson and similar crimes involving fire. Specalists of national repute participated in the program. Among these were Dr. Richard Steinmetz, Chief Investigator of the Mill Mutual Fire Prevention Bureau who presented the subject of "Modus Operandi and the Classification of Fire Setters"; Detective-Inspector George W. Smith of the Detroit Arson Squad, who presented an illustrated lecture on physical and circumstantial evidence; Robert Borkenstein, Chief Technician of the Indiana State Police who discussed the value of sketches and photographs in arson investigation; and W. J. Driscoll of the F.B.I., who described various laboratory techniques useful in the detection of arson. Professor Fred Imbaur of Northwestern University lectured on the "Interrogation of Suspects," and courtroom behavior was discussed by Captain Albert B. Moore, formerly of the New York State Police and well known as a police instructor.

Authorities are agreed that the post-war period is certain to present added problems to the arson investigator as unscrupulous operators attempt to liquidate their moribund war plants by means of arson.

CHARLES S. MORGAN,
Executive Secretary,
N. F. P. A. Fire Marshals' Section

Fourteen States Were Represented at Course for Arson Investigators at Purdue University.
In the front row may be seen some of those who participated in the program: Left to right, Francis Hartman, Public Service Institute of Purdue; Charles S. Morgan, Executive Secretary, Fire Marshals' Section of N.F.P.A.; Dr. Richard Steinmetz, Chief Investigator, Mill Mutual Fire Prevention Bureau; Detective-Inspector George W. Smith, Detroit Arson Squad; Horace McMullen, Chief Special Agent of the National Board; Emmett Cox, Field Officer of the Western Actuarial Bureau; Carter I. Bowser, Indiana State Fire Marshal; Robert Hamm, Director of Firemen's Training, Indiana Inspection Bureau; Chief Joseph Lump, Carnegie-Illinois Steel Co.; Shelby Gallean, Public Service Institute; Lt. R. M. Ballard, U.S.C.G.R., and Course Coordinator Joseph L. Lingo, Public Service Institute.

Post-War Construction Projects

Reports reaching FIRE ENGINEERING evidence a continually increasing number of post-war development programs for the five service. These include not only construction of new fire stations, fire alarm headquarters, training schools, drill towers and fire department repair shops, but rehabilitation of many existing structures, as well as large scale replacement of out-moded fire apparatus and equipment, and purchase of new.

As examples, Chicago, Ill., voters in June approved bond issues totaling $48,000,000 for public improvements of which $2,000,000 is for the rehabilitation of fire and police stations. The City of Mount Vernon, N. Y., has just placed orders for two 85-foot aerial metal ladders and three large size pumpers, and expects to start construction on two new fire stations as soon as materials are available.

May Fire Losses

Estimated fire losses in the United States in May were $34,153,000, an increase of $1,338,000 or four per cent over losses in May, 1944, it was announced by W. E. Mallalieu, General Manager of the National Board of Fire Underwriters. The total was higher than for any similar month since May, 1932, when losses totalled $39,270,000. The Board's estimates are based on incurred losses reported by member companies, plus an allowance for uninsured and unreported losses.

May losses represented a decrease of $3,797,000 or ten per cent from losses of $37,950,000 reported in April. Losses in the twelve months ended with May 31 are estimated at $439,342,000 as compared with $400,072,000 for the year ended with May, 1944.

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Subway Sequence

W. M. Hall stepped into a northbound New York City subway train carrying a waxing machine. The train was crowded and Mr. Hall, unable to wedge the entire machine into the train, permitted the handle to protrude from the door. The train set out, a guard rail at the end of the platform snapped off the handle, it dropped into the pit and made contact with the third rail, sparks flew, the car caught fire, and service was delayed 15 minutes. All of which proves that almost anything can happen in a New York subway.

* * *

"Thrill Firemen"

Eight thrill-seeking members of volunteer fire departments in and around Clarkstown, Nanuet and Spring Valley, N. Y., some of them high school students, were arrested, charged with third degree arson.

They, and others who were questioned, are accused of having set some 60 woodland fires and 20 fires in buildings for the thrill of riding fire apparatus and fighting the flames. Most of them admitted participation in one or more fires.

* * *

Hot Off the Tape

. . . Gossip has it that after the 3-Platoon has been restored to the New York Fire Department Commissioner and Chief, Patrick Walsh, will quit. . . . Three 9-year old boys broke into a Public School in the East New York Section of Brooklyn, over a weekend, found fire axes and proceeded to literally put the 5-story building out of commission. Damage over $5,000. . . . Out in Long Beach, Cal., Fire Chief A. C. Duree thinks the cigarette shortage is a grand idea. It is because of this shortage, he says, that fires caused by smoking in his city dropped from 216 in last six months of 1943 to 122 in same period for '44. (Thanks Ed Springer). . . . After long last it's said that New York will go in for metal aerial ladders and fog nozzles. . . . Thanks Joe Green of Eureka hose for that news item about that swell chief down Miami-way—Henry Ridgeway Chase. . . . Also, thanks, E. F. Short, Newark, N. J., for your contributions. They'll be used, eventually. . . . According to Contrib' Robert T. Levitt, Philadelphia, Pa., the wayward press of that city refers to "Hosemen of Pipe Line No. 2, 6th and Lehigh Ave." That's new terminology for the book. . . . Just to remind you of what's to come, we print the item from the Grand Island, Neb., contrib' held over from last August, about the two boys who, overcome by heat and nostalgia, disrobed and went for a swim in a nearby sandpit. One of the lads left his glasses on top of their clothes. The sun, shining through the specs set the duds afire. The kids wore their bathing suits home. . . . Says Jerry Daly: Believe it or not, E 91 and H & L 43, next door in E. 111th street, Harlem, New York City, have two Goldbergs, two Murphys and a Somers and a Sommers. Both companies are bridged in on one telephone extension from Hdq. The phone rang recently when the phonetic Somers/Sommers were on house watch. Both answered simultaneously, but the Chief who was calling said: "Come on, son, make up your mind which company you are in!" . . . Chicago is taking no chances. Kiddies of the Jolly Fun Day Nursery, that city, were evacuated by the police, after the place was ordered closed as a fire hazard. . . . The Aurora, N. Y., High School, founded as the Cayuga Lake Academy in 1799, was destroyed by fire. . . . Mayor Fiorello LaGuardia was elected an honorary member of the Fire Departments of Sacketts Harbor and Watertown, N. Y., recently and provided with badges n' everything. He lived as a boy in Sacketts Harbor. . . . "Tommy-the-much-married-Manville, was made an "honorary chief" by the Town of Mamaroneck, N. Y. Fire Department. Seems he likes the firemen almost as much as blondes. . . . Among the newly organized fire departments are: Litchfield, O., and Ben Avon, Pa. . . . As indication of acute labor shortage in Waterloo's Fire Department, say contrib R. L. S., Assistant Chief Ray Garrabrant, the top-rated "white collar" member of the department took his turn with other department members on a Saturday at "committee work," cleaning and polishing. . . . In Queens, N.Y.C., a 62-year old woman, living alone in a one-family frame house in the midst of meadow grass—and blind—died when a grass fire ignited her home, trapping her inside.

* * *

Vatalyce Ann Vierling is accused of having sprinkled cleaning fluid on two rugs and setting them afire in apartment of a man in New York City. Police said, when she was arrested, she was "partially disrobed." She denied the latter but agreed to arson charge, claiming she burned rugs because "persons in the room refused to open the door for her when she knocked." Bail, $4,000. . . . In Chicago, 25 of a fleet of 70 trucks of the Chicago Sun—a newspaper, burned with loss of $75,000. . . . While police of Paterson, N. J., were on duty at a fire three blocks away, vandals wrecked a 30-ton Army tank on exhibition in the City Hall Plaza. They shoulda saved their energies for the Huns. . . . Frank Pancelli, a barber who went berserk, carved swatches out of the face of Charles Acker, a retired Yonkers, N. Y. fireman with a razor. The shave was Acker's first in 20 years—and sezze, his last! . . . *In* New York City, Battalion chief Collins (4th Batt.) fell at a fire and dislocated his shoulder. The same night, Chief McGowan, 11th Bat., fell and was injured. Both treated by Dr. Archer, the busy Commissioner-Physician of the N. Y. F. D. . . . When six barges went on the loose, in the East River, N. Y. C., during a heavy fog, a fireboat unsuccessfully tried to find 'em but lost out on the "hide-and-seek." . . . A crazed slayer of four persons in New Jersey defied a posse of more than 300 police, firemen and soldiers until a brush fire, set deliberately, helped climax his siege. . . . Paul Kramer, Reading, Pa., is a lucky guy. He lived to tell the story of how, when 2,000 gallons of gas exploded in a truck he was drving he didn't get a scratch. The blast shook Lebanon, Pa., knocking furniture out of place in nearby homes and wrecking the truck. One fireman was injured fighting the blaze. . . . Cries of a mother cat and her five kittens awakened Mrs. Raymond McFall, her five children and a brother in time to enable them to escape from burning house. The pets perished. . . . In Burlington, N. J., over 700 persons marched calmly out of a motion pix theatre before fire destroyed the building, and two stores. Eight local and four out-of-town companies fought blaze. . . . Louis Varga, 34, was declared guilty of the torch slaying of his business partner, Joseph Fartenbacher, East Brunswick, N. J., poultry dealer. . . . In Kansas City, Mo., neighbors rushed up, pulled 4-year-old Dale Clark out of a burning building. He received painful but not critical burns. No one knew why Dale was in the doghouse, or how it caught fire! . . . When the home of Mr. and Mrs. Eugene Bowers, San Francisco, Cal., caught fire and began to make things hot for Pando, their small pet pup, he solved the problem quickly. Firemen found him in a wash bowl of water in the bathroom! . . . 1,000 hens—layers, too, laid down their lives when fire destroyed $5,000 chicken house of Charles Foley in Babylon, L. I. . . . In another Long Island fire, 16,000 pounds of duck feed was burned! . . . Orchids to 8-year-old Vance Norum, Chicago, Ill., who proved "the man of the house," while his dad is in the Army, by saving the lives of six people—his two younger brothers, whom he carried out of his burning house, and his mother and three women roomers, whom he awakened. He also summoned firemen, who quickly killed the blaze. Centralia, Wash., was mighty proud of its new $18,000 fire truck until firemen discovered it was too big to go through the fire house doors—and even if the doors were enlarged it wouldn't fit inside! . . .

* * *

New Fire Headquarters for N. Y.

Plans for a new headquarters building for the N. Y. F. D. to cost $650,000 are being drawn. It will be a 5-story structure on a city-owned plot, once an exercise yard for prisoners at the rear of the abandoned old Tombs Prison on Center Street. The headquarters will have a 200-foot front on Lafayette Street and may run back 150 feet on Leonard Street. The new home will be built of limestone and steel; fireproof throughout and in design will conform with the modernistic architecture of the Criminal Courts Building, 100 Center Street, and other public structures. All-steel floors will provide an abundance of conduit channels for meeting extensive wiring problems created by the department's fire alarm system.

In addition to the department's administration, division and bureau offices, the new headquarters will house three fire companies on the ground floor. Plans call for a connection with the Tombs prison building and for conversion of the latter into a fire college. Fire headquarters is now located on the eleventh floor of the Municipal Building where it has been since 1914.

Short Cuts and Gadgets

OUTSIDE TELL-TALE MARKERS

Why is it that so few fire stations have any outward identification marks in the form of tablets and/or lights? Some stations are identified by a standard fire alarm box outside the entranceway; some volunteer houses, where they lock up the entrance, have a call-box and sign telling you what to do—where to get the key, or how to sound the alarm—in case of fire. But a majority of municipal fire stations have little or nothing to identify them after dark—and this difficulty grows as "bungalow" and residential-type houses continue to increase.

Obviously a red light hanging over a doorway of such a station isn't so welcome to some communities, but there is usually no objection to a fire alarm box, on a pedestal, with its red or orange light located nearby!

What to do? How to identify the fire station and make it easy for the passer-by to find it, and get help? Have you any ideas?

* * *

TO MEASURE HYDRANT FLOW

Glenn S. White, City Engineer, Fort Morgan, Colorado, submits a picture and description of a measuring device which has been designed to accurately measure the discharge of a hydrant, regardless of the size or condition of the main and under conditions closely resembling those when delivering to a pumper.

Engineer White states that the photograph shows all the salient features except control of the turbulence, which is done with three baffles which do not constrict flow but, as will be noted in the illustration, the water surface is quiet and may be easily read on the gage. Velocity of approach is practically zero.

* * *

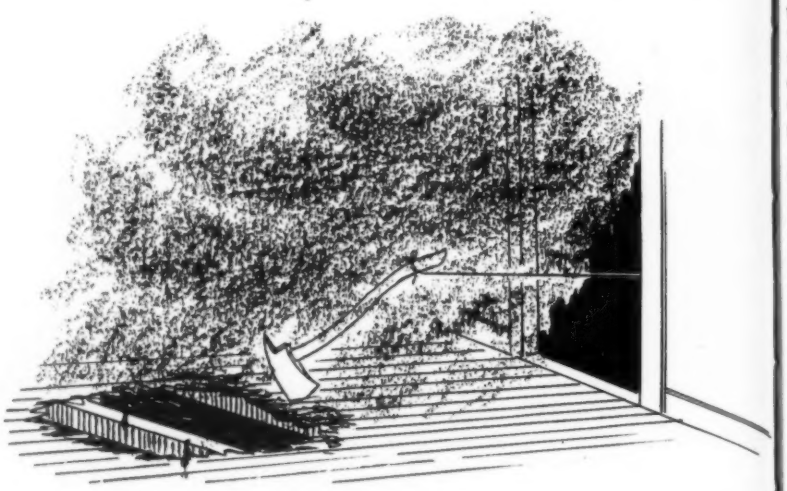
CUTTING FLOORS IN SMOKE

Here's one we picked up from Battalion Chief Thomas O'Brien, New York Fire Department.

Frequently in cutting floors for entry of cellar pipes or distributors, men have to work in heavy smoke. It is necessary to relieve them and in doing so it is not always easy to get back to the scene of the cutting. Also, there is always danger that a man may fall into the partially cut hole and be injured.

To facilitate the shifting of men Chief O'Brien suggests a line be run from the shaft of the axe, driven deeply into the floor on the door side of the hole, and stretched from the handle to the passageway into the exit. The axemen can follow this guide line into and out of the room much as they would follow a line of hose through smoke in attempting to reach the pipe.

P. S. We know of firemen who carry a roll of light cord in their pocket for this purpose and for other uses.



Piece of Cord Facilitates Cutting Floors in Smoke.

DISTINGUISHING COMPANY EQUIPMENT

From Richard Adelman of Fair Lawn, N. J., comes an item on how a volunteer department has solved the problem of keeping its equipment intact.

"In our town we have a volunteer fire department consisting of several companies. We have found that many times equipment has been mixed up, misplaced, etc., because other companies borrow it.

"This was solved, however, by giving each company a color and painting the equipment of the company, usually with a band about an inch wide. The equipment painted includes hose couplings, reducers, adapters, wye gates, siamese valves, hydrant gates, axes, pike poles, ladders, extinguishers, nozzles, hand lights, wrenches and spanners." R. A.

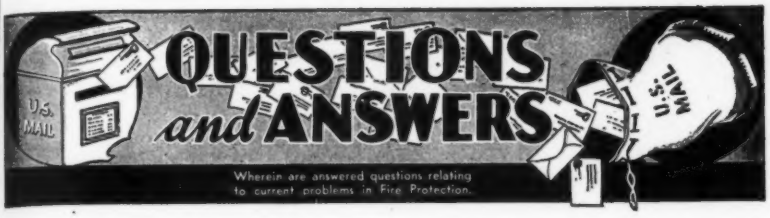
* * *

GUIDE LINES FOR APPARATUS

Backing in these large cab jobs isn't an easy matter for the driver or tillerman, these days, when so many fire station doorways have not been altered to accommodate the modern apparatus.

To facilitate the task we note an increasing number of stations have painted, or inlaid white or yellow guide lines on the apparatus floor, so that the chauffeur can properly line up and spot his vehicle of the floor.

Trailer Unit for Calculating Flow from Hydrant. Note Weir on Which Measurements Are Made.



Inlet and Outlet Velocities

To the Editor:

I would appreciate further information relative to Example 28, in Chapter 3 of Fire Service Hydraulics," which reads as follows: "Is the velocity of water entering a length of 2½-inch hose greater than the velocity of water leaving it when no nozzle is employed?"

The answer given is: "The velocities at the entrance and exit are exactly the same, provided the hose line is flowing full." The given explanation is: "the quantity of water entering the line is exactly equal to the quality leaving the line per minute, assuming there is no leakage."

The arguments advanced against the above listed answer and explanation are along the following lines:

1. That the quantity of water that can enter a section or line of hose which is of equal diameter throughout its length and without a nozzle is governed by the quantity which can leave the outlet.

2. That the quantity discharging from an open butt is determined by the formula: Q = orifice coefficient $\times \sqrt{\frac{2 \times gH}{2.304}} \times$ area of opening, i.e., Q = AV.

3. That the coefficient for an open butt is .9 as given in "Fire Service Hydraulics," and that this coefficient indicates a smaller discharge, resulting in less velocity of flow at the open butt.

4. That acceleration of the flowing water takes place within the hose progressively toward the open butt.

5. That by application of listed formulae, an engine pressure of approximately 125 pounds is required to give a discharge pressure of 25 pounds in a section of 2½-inch hose with open butt.

6. That by application of listed velocity formula, ($V = \sqrt{P} \times 12.1$), the above mentioned hose layout would have velocities of approximately 133 feet per second at the intake and 60 feet at the open butt.

7. That friction loss is proportional to length, other conditions being equal. That this proportional loss has the effect of reducing velocity.

The sum of the negative arguments is that the water enters the line with good velocity which is proportionally reduced by friction, turbulence, and resistance to movement, and that while the quantity of water that enters the line is equal to the amount that leaves the line, the rate of its speed diminishes proportionally as it flows to the open butt. Freeman's table on open hose butts shows 383 GPM and 297 GPM respectively from 50 and 100 feet lines at 25 lbs. hydrant pressure. As only one factor, V, changed in the above layouts, while the area of opening was the same, the only deduction could be the loss of pressure of velocity.

S. R. L.

Answer: The discharge of any orifice, or the flow at any point in a duct is equal to A x V, where A is the area and V the velocity of the water at that point.

In the case of a line of hose, the area of the inlet is equal to the area of the outlet of the line where no nozzle is employed.

If we let A equal the area of the inlet and V, the velocity at the inlet, and A_2 the area of the outlet and V_2 the velocity of the water at the outlet, then we have:

$A \times V = A_2 \times V_2$,

As A is equal to A_2, V must be equal V_2, for otherwise the equation would not balance. Thus the velocity at the outlet is exactly the same as the velocity as the inlet, providing, of course, that both are flowing full.

Now with regard to a line of hose, the same thing applies.

Assume that A and V are respectively the area and velocity of the line of hose at the coupling attached to the pumper, and assume that A_2 and V_2 are respectively the area and velocity of the line at the last coupling next to the nozzle.

As $A = A_2$, then V must equal V_2 for otherwise the equation would not balance.

Both of the above statements show that $V = V_2$, or the velocity at the inlet is equal to the velocity at the outlet.

The only way that this equation could be upset would be to permit some of the water to leak out enroute from the inlet to the outlet of the line. But we assume that no serious leakage occurs, and therefore the velocity must be uniform through the entire line as long as the line of hose is filled.

Hose Layout

To the Editor:

I contemplate the use of a new hose lay for the first company in on fires and would like your advice as to the practicability of such a lay.

With pressure of approximately 45 pounds and a flow capacity of from 450 to 750 gallons per minute at hydrant, will it be advisable to lay short lines of 2½-inch hose, say 300 feet, from hydrant to supply pumper at fire? Pumper will be discharging through 100 feet of 2½-inch hose equipped with 1-inch tip, and 100 feet of 1½-inch hose equipped with ½-inch nozzle.

Would better results be obtained if only 1½-inch hose were used at fire? What formulas should be used in figuring this layout? L. A. S.

Answer: You state that the stretch between the hydrant and the engine will be 300 feet, and that 100 feet of 2½-inch hose or 1½-inch hose will be used from the engine to the nozzle.

This type layout does not enable the fire department to get the full value of the pumper nor of the flow from the hydrant.

At a flow of 240 gallons per minute, the friction loss in 100 feet of 2½-inch hose is 14.1 pounds. The friction loss in 300 feet will be three times this amount, or 42.3 pounds.

Thus there would be left 2.7 pounds for inlet pressure to the engine.

The hydrant could then be expected to give only 240 gallons per minute of its total flow.

If parallel lines of 2½-inch hose were used between the hydrant and the engine, then a flow of 450 gallons per minute could be utilized from the hydrant. In this case, the friction loss per 100 feet of 2½-inch hose would be 12.5 pounds, and for 300 feet, 37.5 pounds. The residual pressure at the pump would be 7.5 pounds, which would be sufficient to deliver to the pump this quantity of water.

It would be better to place the pumper at the hydrant. If the pumper was so placed and operated at 120 pounds pressure, two 400-foot lines of 2½-inch hose with 1⅛-inch nozzles could be supplied, and the total flow would be 530 gallons per minute.

Or three 400-foot lines of 2½-inch with 1-inch tips could be utilized, with nozzle pressure of 70 pounds, and the total flow would be 741 gallons per minute (if a 750-gallon pumper were employed).

One and one-half inch hose has proven of great value in the fire service for controlling small fires, or fires spreading through partitions, ceilings and other confined spaces. However, small diameter hose does not take the place of the larger diameter, with 1-inch and larger nozzles, for general fire fighting purposes.

Hose in 50-foot Sections

To the Editor:

In a recent examination, the question was asked, "Why is fire hose manufactured in 50-foot sections?" The only answer I find in a fire department manual is for convenience in handling and replacement.

A manual states that fire hose couplings are made from bronze and aluminum and that expansion rings are made of copper. My idea was that

(*Continued on page* 505)

For Practical Discussion of Current Fire Department and Fire Management Problems

REINSTATEMENT OF DISCHARGED VETERANS IN FIRE DEPARTMENTS

NOW that many servicemen who were formerly firemen are being mustered out of the armed forces with medical discharges or under the point system, the focus of attention is on the manner in which they will be reinstated in their old jobs in the fire department.

All of the chiefs reporting state that ex-firemen who have received honorable discharges and who are physically fit will get their jobs back. In some cities, if a fireman cannot go back on active duty, he may be given a job in the fire prevention bureau or in the fire alarm telegraph office. One city makes arrangements to place a disabled veteran in some other department in the city government.

In each instance the chiefs participating in the discussion state that the time spent in the armed forces will be credited to the men's seniority in the fire department.

Some cities do not credit time in the armed forces to the pension set-up. Other cities give full pension rights without payment of assessments. Still others give the men the opportunity of paying up their pension assessments.

If the men are not physically fit for fire duty, some cities pension them according to their length of previous service in the fire department. One city allows $3.00 a month for each year's service, with a minimum of $30.00 if the man is unfit for duty. A southern city gives a full pension to the widow of any fireman killed in the line of duty.

All cities do not give veteran's preference in examinations. Some allow three to ten points in both entrance and promotional examinations. Others only give preference in entrance examinations.

Readers are invited to send in their comments on this subject which will be continued in the August issue. Address communications to Round Table Editor, FIRE ENGINEERING, New York 18, N. Y.

Earl A. Traeger, Chief, Minneapolis, Minn.: We have 180 men now in the armed forces, many of whom were appointed on a temporary basis to replace permanent employees who went into the military service. Some of these temporary men also entered the armed forces and were, in turn, replaced by other temporary appointments.

Our present Civil Service Commission's interpretation, also that of our City Attorney, is that, under Chapter 489, Laws of Minnesota 1945, men who went into military service will be reinstated to their former positions, if such former positions were of a permanent nature or had not been abolished. In other words, they do not believe a man returning from military service can "bump" a man now on the department who has greater seniority rights. They believe these men should be put on the layoff list in their regular order for reinstatement when further vacancies occur.

Our maximum strength in May, 1944 was cut from 502 men to 475 by our City Council. Due to military leaves, resignations and deaths, and also to our inability to make replacements, the department now numbers only 425. Thus you will see we have fifty actual permanent vacancies from the 475 total, or 79 vacancies if the maxium is again raised to 502 after the war. As stated above, we have 180 men to fill these vacancies, who are now in the armed forces.

It may be possible that the present interpretation of the local governing bodies will be subjected to a court decision.

HERE IS THE QUESTION

1. When former firemen, now in the armed forces are mustered out, will they be reinstated in your department?

2. Will the time spent in the armed forces be credited to their seniority in the fire department?

3. Will they be given veteran's preference in promotions?

4. How will you handle the problem of returning ex-firemen who have received a medical discharge from the armed forces, but who want to regain their former fire department jobs?

The time spent in the armed forces will be credited to the seniority in the fire department.

There seems to be some question whether men who have obtained veteran's preference in this war will be entitled to use this preference now to obtain promotions on lists which were established before the war, and which have not yet expired. The present Civil Service Commission rules that they are, but we have heard rumors, unsubstantiated as yet, to the effect that the Attorney General's office rules otherwise. This matter has been referred to the latter.

However, veterans of this war will be entitled to this preference on any future promotional or entrance examinations. The State of Minnesota allows absolute veteran's preference; that is, no non-veteran is entitled to be certified for appointment or promotion until such lists are exhausted of all veterans, regardless of the standing of the non-veteran.

Returning ex-firemen who have received medical discharges are not absolutely required by our City Council to undergo a physical examination, but it has been my policy to direct these men to our City General Hospital for such an examination to ascertain whether they, in the interests of public safety and the welfare of the men themselves, are physically capable of performing the duties of active fire fighters.

John J. Tubridy, Commissioner of Fire, Buffalo, N. Y.: Firemen and officers will be reinstated after their discharge from the armed forces.

All time spent in service will be credited to their seniority. Under a New York State law pension payments must be paid up to cover time in military service.

Veteran's preference for promotion will be covered by N. Y. State law and civil service rule for service connected disabilities only.

Firemen have already returned after receiving medical discharges. They are examined by our fire department surgeon and on his approval are returned to active duty in the department. Their disabilities have been minor and they are fit to perform fire duty.

George E. Jacobs, Chief, Canton, Ohio: Former firemen will be reinstated if they have held office or position under classified service for ninety days or more and are physically able to perform the duties of such office or position.

Whenever the time or period of employment in the classified service affects the status, rank, rating or qualifications in any respect of any person who has served in the armed services of the United States, such person will be given credit for the period in which he served as though such time were served in the course of his regular employment.

Veteran's preference will not be given in promotions.

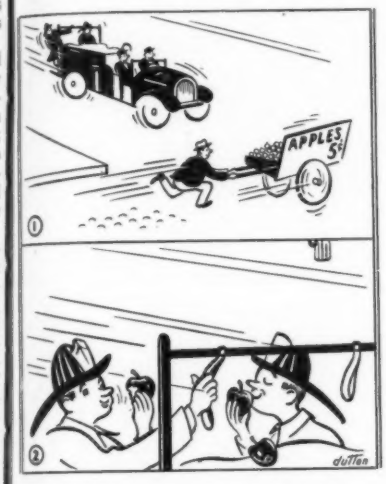
All returning ex-firemen are required to pass a satisfactory physical examination before being reinstated to their former position.

Martin J. Hayden, Chief Engineer, Bridgeport, Conn.: All firemen mustered out of the armed services will be given their jobs again. Their time

(*Continued on page* 476)

FALSE ALARMS

Barber: "Was your tie red when you came in here?"
Customer: "No, it wasn't!"
Barber: "Gosh!"



He: "The doctor says bathing alone will not keep you healthy."
She: "Oh, yeah! Well, just the same I'll continue to bathe alone."

Let Go the Anchor

The vicar prided himself on his oratorical powers. He was describing the downward path of the sinner, and used the metaphor of a ship drifting and going to pieces on the rocks.

A sailor in the audience was deeply interested.

"The waves rush over!" cried the preacher. "Her sails are split! Her yards are going! Her masts are shivered. Her helm is useless. She is driving ashore! There seems no hope! Can nothing be done to save her?"

The sailor rose in his seat, his eyes wide with excitement.

"Let go the anchor!" he shouted.

Tourist: "Why are those trees in the orchard all bent over?"
Farmer: "You'd bend over, too, if you were full of green apples."

I Know!

Mother (to young son): "Whose little boy are you?"
Son (disgustedly): "Gosh! don't tell me you don't know."

Whistle While You Work

A soldier recently transferred to a carrier pigeon outfit was busy cleaning out a cage. He sang as he worked. A passing captain commented: "Good heavens, don't tell me you enjoy doing that!"

"Sir," he replied, "before I came here I was in the cavalry."

I Wonder

Now that madam has fought in the war
life a man
And proved she can rivet as well as he
can,
And worked on the railroad and driven
a truck,
And learned how to weld without getting the buck,
Followed trades of the butcher and
baker and cop
And dozens of others with nary a flop,
I wonder if, when she returns to her
house,
She'll still scream and bolt at the sight
of a mouse?

LIEUT HARRY W. HILL

Prohibitionist Orator: There are some who merely advocate temperance. But what, I ask, is the real drink question?
Voice from back row: "What'll you have?"

"Why is it that sometimes you seem manly, and sometimes effeminate?"
"Heredity, I suppose."
"Heredity?"
"Yeah, half of my ancestors were men and the other half were women."

Fireman

First Fireman: "Gee, I feel miserable—I tossed all night."
Second: Ditto, "me too—I lost fifteen bucks."

Certainly a woman has a cleaner mind than a man. She should; she changes it oftener.

A wolf is a member of the male species who devotes the best leers of his life to women.

The souse tottered along the curb. Several times he slipped off the curb into the gutter. Each time he clambered onto the sidewalk again. "Helluva long stairway," he muttered.

"I know a good joke about crude oil."
"Spring it."
"It's not refined."

A wedding ring like a tourniquet . . . it stops your circulation.

Manager: "What? You come into my famous restaurant, drink a glass of water and then walk out?"
Mac Gregor: "Hoot mon! Did ye expect me to *stagger* out?"

"I saw you the other day at the corner winking at the girls."
"I wasn't winking. That's a windy corner. Something got in my eye."
"She got into your car, too."

Customer: "How about it, any vitamins in the food?"
Waitress: "I hardly think so, sir. You see we have a man come every night who sprinkles powder around and kills them."

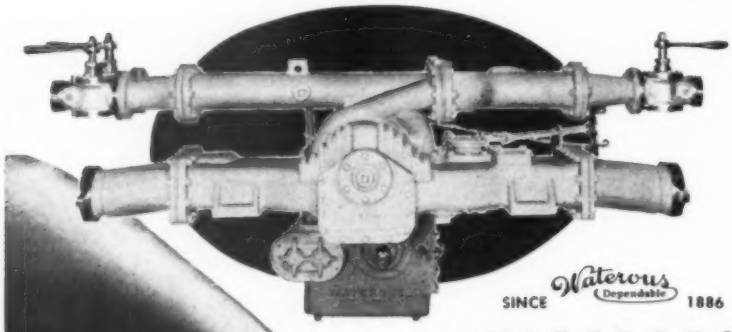
If you want to forget all your other troubles, wear tight shoes.

Easy Army Life

Suppose you heard the one about the milkman who wrote back home after joining the army, "This is the life for me. You can lie in bed every morning until five-thirty."

WATEROUS
SUPER POWER
for the
BIG FIRE

• The ability of WATEROUS Pumps to deliver large streams is the result of liberal surplus capacity. WATEROUS Dependability is the result of the superior design of each part. The next time you are in the market for a fire truck we invite you to make a detailed examination of the construction features and we are confident that you will specify WATEROUS.



SINCE Waterous Dependable 1886

WATEROUS
COMPANY
SAINT PAUL, MINNESOTA
Also- Manufacturers of
WATEROUS Fire Hydrants

Photo by
Frederic
Lewis

WATEROUS
FIRE PUMPS

New N.B.F.U. Officers

Frank A. Christensen, Vice President of the America Fore Group Insurance Companies, New York, was elevated to the Presidency of the National Board of Fire Underwriters at its 97th annual meeting on May 24.

J. M. Haines, General Attorney for the United States of the Phoenix Assurance Company, Ltd., New York, was elected Vice President of the Board to succeed Mr. Christensen. Mr. Haines has been Chairman of the Executive Committee for the past year.

Other officers were reelected as follows: Secretary, Peter J. Berry, President, Security Insurance Company, New Haven, Connecticut; Treasurer, B. M. Culver, President, Continental Insurance Company, New York; General Manager, W. E. Mallalieu: and Assistant General Managers, A. Bruce Bielaski and Charles H. Lum (on leave); also newly elected Assistant General Manager, R. C. Stange (at San Francisco).

Fires Increase in Motion Picture Houses

The Fire Record of The Journal of Commerce indicates a growing number of fires in motion picture houses. Underwriters assign several reasons. Smoking is attributed as one of the causes and poor housekeeping another in view of the inability of the managements to obtain steady and reliable help. Strangely, some of the fires have started early in the morning. The reason given here is insufficient oxygen to support combustion while the places are closed at night, particularly during the hot weather. When doors are opened in the morning, however, incipient fires are quickly nourished.

Book Shelf

Jobs for the War Disabled—A little leaflet prepared by the American Veterans Association. Free copies may be obtained from that organization, 271 Madison Avenue, New York 26, N. Y.

How to Speed up Settlement of Your Terminated War Contract, by J. K. Lasser. Published by McGraw-Hill Book Company, Inc., New York, N. Y. 178 pages. $3.50.

This book, written by the author of "Your Income Tax" which has been used as a tax guide by a great many persons, will be very helpful to business executives, lawyers, public accountants for use in connection with the present mass of terminations resulting from V-E Day. It contains a complete statement of all the laws, rules, regulations, forms, reports and other Government data issued to this date on the subject of termination. Much of it has been boiled down into a series of check lists that tell the large and small contractor how to proceed and how to get maximum protection in his dealings with Government officials.

Airplane Crash Fire Fighting Manual, published by the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. 96 pages, printed in color with numerous illustrations and diagrams.

The authors have utilized much of the material contained in the U. S. Army Technical Manual TM5-316 which is the standard Army text for fighting airplane crash fires on the airport.

The booklet contents are grouped under eleven chapters and forewords covering purpose and scope, airplane crash fire and rescue hazards, rescue features, basic fire hazards, armament, fixed and portable fire protection on the airplane anticipating crashes, response, rescue operations and fire fighting and airfield operations.

SODA-ACID EXTINGUISHER

Red Star

DRENCHES FLAME UNDER PRESSURE

Speed is the keynote of Red Star extinguishing action. A strong stream, driven by chemical pressure, is released immediately when the extinguisher is inverted. It has an effective range of 40 feet. Red Star is constructed with exclusive Sure Sweat seam, is easy to use, has no moving parts to get out of order.

2½ Gal.

AVAILABLE AT LAST!

The extinguisher you have been waiting for—in lustrous polished copper!

WHERE TO USE

Underwriters approved for use on Class A fires, specifically against paper, wood, rubbish, textile, and similar materials.

HOW TO USE

Direct nozzle; invert extinguisher. Aim stream at base of flames, gradually working upward. Discharge completely.

Let General Protectioneers prescribe the right extinguisher for your every fire hazard.

IF IT'S GENERAL IT'S DEPENDABLE

THE GENERAL DETROIT CORP.

2270 E. JEFFERSON AVE., DETROIT 7, MICH.

Distributors in principal cities

CHICAGO DALLAS NEW YORK

West Coast Affiliate: The General Pacific Corp.

Seattle • LOS ANGELES • San Francisco

MIDWESTERN'S COMBINATION SUIT IN RUBBER OR CANVAS

FIREMEN like this Special Combination Suit for many reasons: Detachable wool linings; flexible elastic inner sleeve for wrist to keep out water, cold, sparks; exclusive Midwestern Safety Snap, and many other outstanding features. Midwestern garments are favored by the larger municipal departments throughout the country.

Regular Firemen's Boots Now Available!

Firemen's boots ¾ length, reinforced instep, felt linings. Made of new synthetic rubber. Write.

The Coat:

- Adjustable collar strap
- Corduroy lined collars
- Reinforced, double stitched seams
- 6-inch storm flap
- Two outside pockets

The Pants:

- Rubberized fabric belt in lining
- Eight suspender buttons
- Safety snap on belt
- Special Vanitex fabrics
- Reinforced by rivets

MIDWESTERN PROTECTIVE CLOTHING

MIDWESTERN MANUFACTURING CO.
MACKINAW, ILLINOIS

See your Midwestern Mfg. Co. representative for catalog and prices, or write the factory.

New Trend in Fog Application

(*Continued from page* 458)

circular tank measuring 18-feet diameter; (2) a rectangular, shallower tank measuring 20 x 30-feet (both of these are similar to test receptacles used in Navy training schools) and (3) an elevated tank formed out of an old steel boiler. Below this tank a shallow paved ditch, approximately 1-foot deep by 3-feet wide, led toward the rectangular tank. The ditch was designed to simulate a street gutter and carry the spill from the elevated tank. Over the latter a perforated pipe carried volatile liquids to intensify the fire. Other volatiles were placed within the tank. The "gutter" was also filled with the same flammables used in the circular and rectangular tanks. This was a mixture of crude oil, crank-case drainings, kerosene, lard oil and gasoline. The liquid sprayed over and into the elevated tank was lighter and consisted largely of cleansing solvents, kerosene, lard oil and gasoline having a flash point somewhere between kerosene and gasoline.

The area involved in the fires in these receptacles and gutter, exclusive of ground spills, exceeded 1,000 square feet. When ignited and allowed ample time for pre-burn, the heat made it necessary to take shelter over 150-feet to windward.

In fighting this fire the deluge fog unit was driven across the line of the fire, at right angles to the wind which was approximately 15 mph. Both turret guns were operated at 100 lbs. pressure, delivering approximately 500 gpm each. The pipes were manually operated, control being by hand-wheels, which materially increased the difficulties in extinguishing the fires as the truck moved into range.

Walkie-Talkie Used

In this test, Chief Heinz took advantage of his fire department two-way radio system to place a fireman equipped with portable radio unit—walkie-talkie—on the truck between the two firemen operating the turret pipes. Another radio operator took position next to the Chief, both of whom were located at an angle so that they might observe the progress of the fire, and of its extinguishment. By means of the walkie-talkie, the Chief was able to direct the operators of each turret pipe most effectively to employ their fog streams and thus partially offset the slowness of operation of the gear-controlled pipes.

Incidentally, the forward gun was operated to afford fullest protection to the driver of the truck and the crew. Through amplifier hookup, observers were able to hear all directions given the crew on the truck, and the conversation between the truck radio operator and the Chief and his aide. An unexpected development in the tests was the fact that dispatchers and radio operators in fire alarm headquarters, over a mile and a half away in the heart of the city, were able to pick up the two-way conversation on the test grounds.

In an operation of this nature the most difficult problem is mobility.

As the deluge fog unit was operating on four 2½-inch lines connected to a pumper located outside the grounds it was necessary to "walk" the lines be-

Fire Fighting Blizzard

by

NATIONAL FOAM

Fire is unpredictable—like the weather, but there is nothing uncertain about the man-made "blizzards" of tough, clinging, fire-smothering foam produced by National Foam. It's there when and where you want it — as a gas-tight blanket of Aer-O-Foam — to snuff out flames and prevent flashbacks.

The U. S. Navy calls Aer-O-Foam "bean soup"—with respect. Easily and quickly applied, it is a veritable blizzard of thick, tenacious bubbles smothering the immediate surface afire — without interference with other activities.

Fire strikes in season and out. Aer-O-Foam "blizzards" are available the year around.

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for use of Fire Departments to meet all types of foam fire fighting requirements.

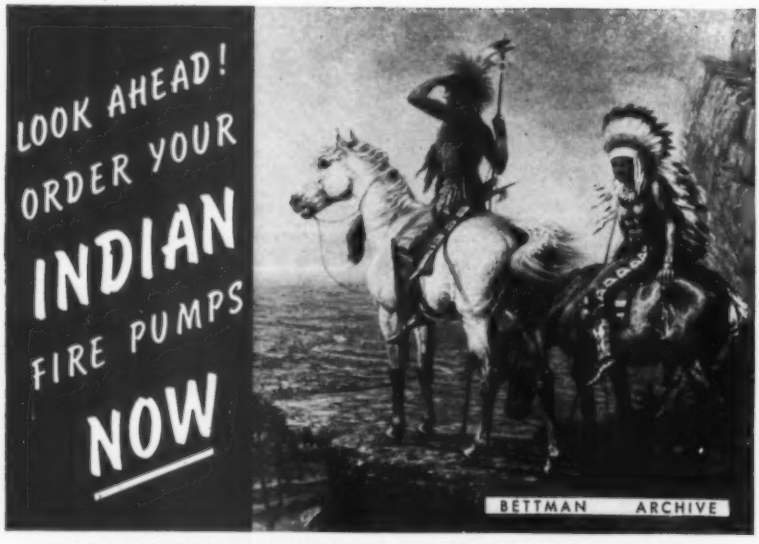
BACK THE ATTACK
BUY WAR BONDS

Beginning of a Foam Blanket suggests an early snowfall.

NATIONAL FOAM SYSTEM, INC.

SPECIALIZING IN FOAM FIRE PROTECTION

Packard Building, Philadelphia 2, Pa.



40% OF YOUR CALLS CAN BE HANDLED WITH INDIAN FIRE PUMPS ALONE!

Read Chief Odom's letter below telling of the many ways in which his department uses their INDIAN FIRE PUMPS. This letter is typical of hundreds we receive from enthusiastic fire departments.

CLEAR WATER
causes no damage to costly furnishings or clothing. Nozzle can be adjusted for pressure stream or a spray as necessary. Tank holds 5 gals. of water.

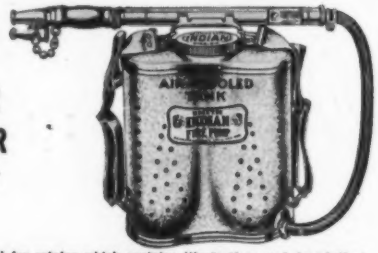
Fire Chief Tells of Many Uses for INDIANS

D. B. Smith & Co.
Utica, N. Y.

We have INDIAN FIRE PUMPS mounted on all our trucks. The reason I think so much of INDIAN FIRE PUMPS is because they are used to put out about 40% of the fire alarms that come in, such things as over-heated stoves, kitchen stoves, small blazes confined to one room and a great number of small fires around chimneys of wood and shingled roofs. We also get many fires in country homes we take care of with INDIANS.

Carlton Odom,
Fire Chief

ONLY CLEAR WATER USED!



Send for catalog which contains illustrations and description of INDIAN FIRE PUMPS and gives prices. Write us today.

D. B. SMITH & CO., 406 Main Street, Utica 2, New York

PACIFIC COAST BRANCHES:
Hercules Equipment & Rubber Co., 435 Brannan St., San Francisco, Cal.

Roy G. Davis Co. 617 E. Third St. Los Angeles 13, Cal.
Carco-Conwhit Co. 520 S.W. Pine St. Portland 4, Oregon
The Conwhit Co Klamath Falls Oregon
Mill & Mine Supply 2700 4th Ave. So. Seattle, Wash.

hind the truck. This was somewhat simplified by attaching guide or "pull" ropes to each line, fastened to the truck. The total distance traveled by the truck in the operation was only about 85 feet.

Following this procedure, all fires in the tanks and the gutter were extinguished in 45 seconds. A 1½-inch hand line with fog nozzle was later used to overhaul fire, caused by overflow spillage, which may have been lurking on the leeward side of the rectangular tank.

Exclusive of the dash or two given by the hand line, this hot fire was completely extinguished with less than 900 gallons of water. Observers were of the opinion that with a 1,000-gallon booster tank and a self-contained pumping unit, the fire could have been extinguished in even less time, particularly if the swivel-type turret or deck pipes were used.

"Fog" Deluge Attack by Ladder

In an effort to determine the effectiveness of volume fog on the upper stories of structures, Chief Heinz and his staff conducted another interesting test at the fire department drill yard in the rear of Eng. 6 and Ladder 4.

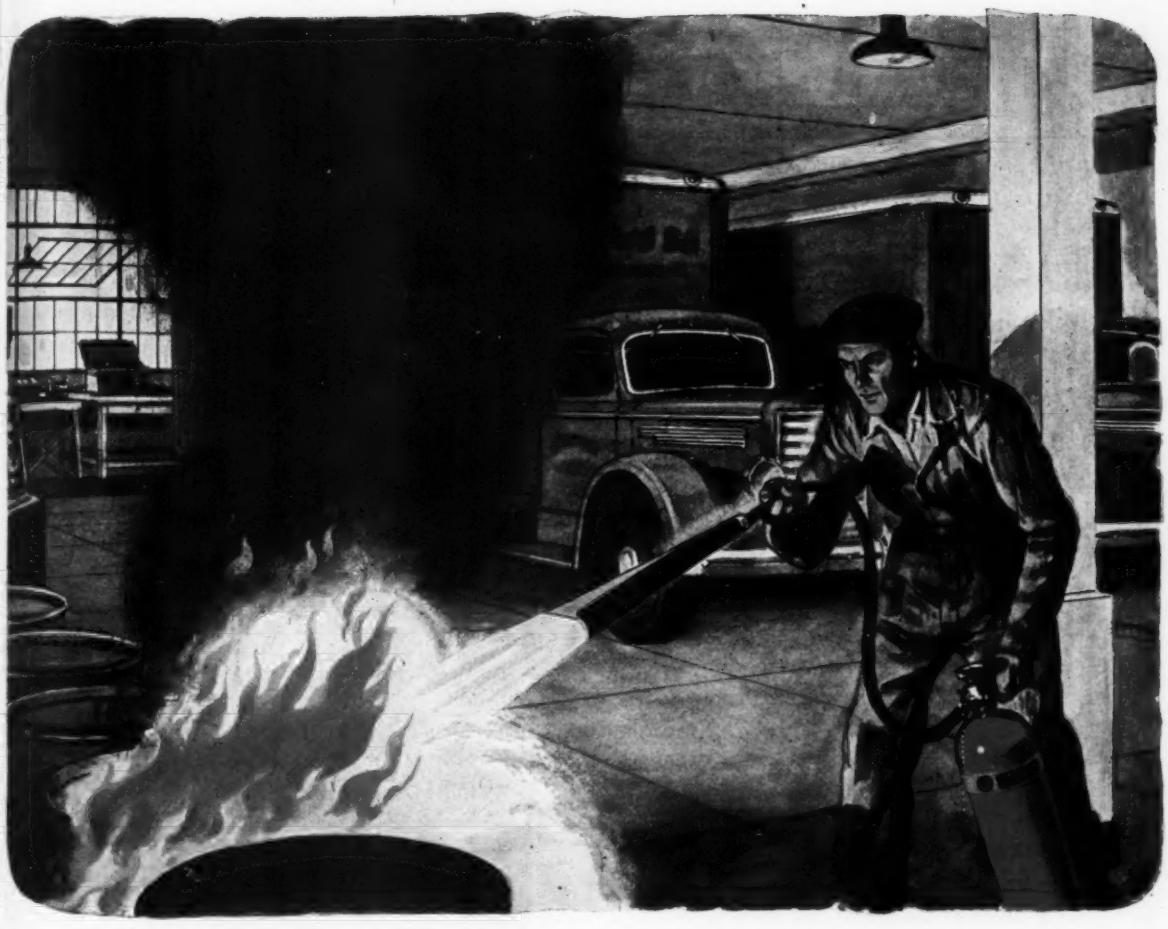
In this test the top floor of the brick and concrete drill tower was loaded with about three inches of oil and solvent over almost the entire floor area. The fifth floor was fitted with three shallow troughs which in turn were filled with the same solvents used in the beforementioned test. In addition, several pails of gasoline were so rigged that they could be dumped into the floor area to accelerate the fire. Typical of drill towers, there were no windows and the only woodwork was contained in the window trim where extra heavy wooden sills were provided to accommodate scaling ladders. On top of the structure a wooden platform with wooden shed and siren had been built as part of the air-raid warning system. This constituted an exposure and could be ignited by the fire lapping upward.

Hose Layout at Test

An 85-foot, three-section, metal aerial ladder was equipped with two ladder pipes, one located about six feet below the other. One pipe was supplied through the regular 3-inch canvas ladder-pipe hose into which two 2½-inch lines were siamesed; the other was supplied through a 2½-inch line taken off two other 2½-inch lines. The ladder pipes were the conventional, removable type with detachable nozzle-tips. Each of these had been fitted with one of the 500 gpm fog heads. They were controlled vertically by guide-lines operated from the truck turntable, and horizontally by rotating the ladder itself.

One 1000 gpm pumper and one 750 gpm pumper were used to supply the two ladder pipes. Eng. 12 (1000 gpm) nearest the tower fed the 3" ladder hose, at 125 lbs. pump pressure. Eng. 3 (750 gpm) located about 150-feet distance, supplied the other ladder line at 200 lbs. pump pressure. A 1½-inch hand line was taken via the fire escape to the second floor to be ready in case of emergency.

In this test, the fire was ignited at 1:25 P.M. and permitted to gather good headway before the pails of gasoline were spilled. Three minutes later the



Deadly to fire . . . and only to fire!

It's sudden death to flames, of course — in flammable liquids or electrical apparatus — but that's just *one* of the outstanding advantages of Kidde equipment.

Equally important: dry, inert carbon dioxide gas — the fast, sure extinguishing agent used in Kidde equipment — is *completely harmless* to materials and machines.

Carbon dioxide gas cannot contaminate or dilute valuable liquids. Used on electrical fires, it will not soften or water-soak insulation. It's a non-conductor too — there's no danger of short circuits, or of shock to the operator. And there's no after-fire mess to be cleaned up.

Kidde portable extinguishers for small, isolated blazes in flammable liquids and electrical equipment; wheeled units and built-in systems for major hazards — all are deadly to fire, and *only* to fire. The Kidde line includes the *right* kind of protection for every tough-fire hazard in the accompanying list . . . ask a Kidde representative for full information — he's skilled in the ways of fire protection.

* * *

KIDDE KILLS TOUGH FIRES *in Process Rooms, Ovens, Spreaders, Motors, Storage Rooms, Mixers, Coaters, Transformers, Dip Tanks, Agitators, Washing Trays, and Control Panels.*

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

Walter Kidde & Company, Inc. • 140 Cedar Street • New York 6, N. Y.

121 YEARS EXPERIENCE

EASTMAN BACKGROUND FOR KNOW HOW

Fire fighting was much in its infant stages when Eastman opened the doors of his first modest factory at Concord 121 years ago. Ever since, his people have formed the habit of contributing to each revolutionary step ahead.

Proud of their attention to detail in the manufacture of every item of fire-fighting equipment for men in the field, they today enjoy the reputation for undisputed leadership in the design and production of fire fighting products.

Dependable service has been a factor from the start, thereby furnishing the means for saving more lives and property throughout the years than any other like manufacturers in the field.

Eastman engineering skill plus the long years of service assures you the very best in fire-fighting products obtainable. Specify EASTMAN.

Nothing takes the place of Experience

SAMUEL EASTMAN COMPANY, INC.
CONCORD, N. H.

two upper floors of the tower were full involved, and heat could be felt by the observers fully 80 feet away. At this point both fog streams were operated.

At 1:45 P.M. the fire appeared knocked down but there were continual flashbacks, as the gasoline and solvent vapors ignited from fire in pockets that could not be reached by the fog. It was not considered advisable to drop the ladder so that the fog heads could be operated inside the windows.

Soon after the fire in the upper stories had been controlled, spill-fires developed on every floor from the fifth to the first, caused when gasoline and solvents carried down by the deluge of water ignited. Flaming liquids poured out of the first floor doorway onto the concrete apron of the drill ground. This fire was quickly snuffed out by shifting the ladder and directing both fog heads downward onto the fire.

The hand-line and fog nozzle was used to kill concealed fire on the lower floors and to overhaul the fire in the window frames. At the conclusion it was found that no fire had extended to the wooden platform and shed atop the structure.

The test, although not conclusive, demonstrated the possibilities of using ladder-pipes for delivering volume fog whether for extinguishing fires in the street side of a structure, or for covering exposures.

Among the observers of these tests were Lt. Col. Bingham, Fire Marshal; Capt. Grecsek, Asst. Fire Marshal; Capt. Butterfield, Lieuts. Kennedy and Chaplin, Corp. Tex Bradford and Fire Chief Kispenberger, all of the Brooklyn Port of Embarkation, Mr. Hugh McNair, Director of Fire Protection, General Aniline and Flm Corporation; Chiefs Shipman of New London and Spencer of Hamden, Conn.; and representatives of makers of fog nozzle equipment.

Rice Mill Fire

(*Continued from page* 459)

eighths inch tip. Without this hookup, Chief Wimer reports, they would have lost the mill and possibly the exposed structures. The inter-connections were effected with the assistance of the department's quad, which went six blocks to the Producers Rice Mill and twenty-seven blocks to the Walton Rice Mill to by-pass their water supply into the city's mains. The Chief stationed extra men at these two rice mills on watch as a precaution.

With lines working directly onto the fire, and covering the exposures, as shown in the diagram, the fire was under control at 5:30 A.M., when the Air Field company was released. Fire continued to smoulder in some clean rice bins, it being impossible to get water to the seat of the fire through the rice storage of about fourteen carloads in the bins.

Lines with men were left on watch and, at 5:00 P.M., on the 8th, the department returned to the scene as fire had eaten under the bins. In order to get at the fire it was necessary to institute salvage work, which was done by mill hands and prisoners of war from the Army Air Field.

Of the thirty firemen, and assisting mill hands who worked on the fire only one person was injured seriously. A fireman had three ribs fractured.

Will it hold, Chief?

HAVE your life net inspected by experts who are qualified with wide experience. One who makes a thorough examination and knows what to look for.

There is real danger in carrying and using nets that will not stand the strain of a falling body.

In our tours of inspection, we have found many nets with defective parts. This greatly impairs their safety value. Some of these would bring embarrassment and probably law suits if used. THEY SHOULD BE REPLACED.

This is a matter that is of vital importance, too important to put off another day.

Write us if you have any doubt about the strength of your life nets, regardless of make.

THERE IS A NATURAL DETERIORATION IN LIFE NETS!

(for instance, leather can deteriorate as much as 10% yearly—fabric as much as 7% yearly.)

Do not delay in having your life net inspected. Lives depend upon it.

★ WRITE FOR PARTICULARS ★

ATLAS SAFETY EQUIPMENT CO., Inc.

26 WARREN STREET ★ ★ ★ ★ ★ ★ ★ NEW YORK 7, N. Y.

SAFER BECAUSE OF BALANCED WEAVING

Circular creel feeds cords to one of Eureka's Multiple-Weaving Looms. This specially designed loom gives to the jackets of Eureka Fire Hose the perfect balance essential to uniform high quality.

In fire hose, *balanced weaving* is a factor of prime importance. It eliminates excessive writhing, twisting and elongation when hose is subjected to pressure at the scene of action.

Eureka's *BALANCED WEAVE* results in a stronger . . . safer . . . and more trustworthy hose for use under the most hazardous conditions.

"For greater protection to life and property"

EUREKA FIRE HOSE

Division of **United States Rubber Company**

EUREKA

1230 SIXTH AVENUE · ROCKEFELLER CENTER · NEW YORK 20, N. Y.

The Paris Fire Brigade

(*Continued from page* 453)

brigade lieutenant told the commander that the situation was hopeless (actually it wasn't and the fire could have been extinguished in a short while) and that all he could do was to protect the surrounding property. In the meantime, a collaborationist civil brigade arrived and proceeded to extinguish the blaze but not before 750,000 gallons of precious German fuel had gone up in smoke. Of course there was an investigation but the blame could not be centered on any one person without dragging in the name of the stupid German commander.

Fireboat on the Seine River.

Another incident that occurred in Paris itself has a humorous twist. A large fire broke out in one of the German Todt centers. The sapeurs were summoned and responded under the command of a captain. While they were responding in the general direction of the fire they stopped and asked a German sentry if he had called them or if there was a fire in his vicinity. The German soldier, not having any knowledge of the fire as it wasn't in his immediate area said "no." The captain took the man's name, rank and serial number for future verification, thanked him for his information and returned to the station and booked the run as false.

The story of the liberation of Paris is now well known to all. The regiment was issued rifles and once more became a line outfit. Many of the men fought and died to free the city and many more died by sniper fire while extinguishing fires the Germans had started.

Arsonist Arrested

A 38-year-old cook has been arrested by the Ontario Provincial Police and charged with arson in conection with a fire which destroyed the Red Lake Hotel at Red Lake, Ont. Seven persons were burned to death in the blaze and thirty-five injured.

SAFETY and DEPENDABILITY ARE REGULAR FEATURES OF PIRSCH AERIALS

The Pirsch Aerial Ladder Truck "Tops Them All" in design, performance and dependability combined with safety.

It is equipped with the Pirsch Patented Hydro-Mechanical Hoist; America's first all powered aerial hoist with about 15 years service experience behind it and used by more than 100 cities.

Consider the facts regarding safety and dependability when you buy your next aerial ladder truck.

The Pirsch 65′ Intermediate Aerial Ladder Truck featured above has been delivered to City of Milwaukee, Wisconsin.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100′ AERIAL LADDER"

Chief POWHATAN

HYDRANT CONNECTIONS

MALE AND FEMALE

DOUBLE FEMALE

That Stand the Gaff!

The U. S. Army and Navy have proved that ever since the beginning of hostilities. As pioneers in the manufacture of fire department fittings and fire protection items for over 50 years you can, as always, be assured of the best construction in any item you order.

Now that the European menace has subsided some of our items are again available for home use.

CATALOG ON REQUEST

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

The Round Table

(*Continued from page* 464)

in the service will be credited to their seniority in the fire department.

Servicemen will be given veteran's preference in examinations under civil service regulations.

Men who have received medical discharges will have to pass a physical examination by civil service direction. He then will be assigned wherever he is able to work.

George E. McGaw, Chief, Fall River, Mass.: Firemen from this department now in the armed forces will be reinstated to this department when they are discharged, providing they can pass a physical examination given by the department physician.

Members of this department are given seniority credit for all time spent in the armed forces.

Under present state laws they will not be given preference on promotional examinations. Veterans' preference is given only on entrance examinations.

All men returning from the armed forces must meet the physical requirements of the department. Therefore, if a man is not able to meet these requirements, it would be impossible to reinstate him as a fireman.

C. M. Johnson, Chief, Knoxville, Tenn.: When members of the department are mustered out of military service and return to the city and desire their former place in the department, it will be given them if they are physically fit.

Time spent in the armed forces will be credited to their seniority in the department.

Members will be given consideration for service in the armed forces in making promotions. However, military service alone will not be the determining factor.

All members of the department returning from military service before again entering the service of the fire department will undergo a physical examination by a city physician to determine his fitness for fire service.

We feel, in all fairness, that should a member of the department become disabled while in military service that the liability and responsibility should rest with the Federal Government, rather than with a municipal government.

S. T. Porter, Chief, Washington, D. C.: Every fireman released from military service will be restored to duty if he is honorably discharged and is physically qualified after examination by our Board of Police and Fire Surgeons if he makes application to be returned to our service.

All rights and benefits that would have accrued to them had they remained in the department will be credited.

Veteran's preference only as to time spent in the military will be given. This time will be credited on efficiency ratings as service in our department. No additional points will be allowed as serviceman's preference.

Men who return physically unable to perform the duties of a fireman, of course, will not be restored as firemen. However, the Commissioners of the District of Columbia have appointed an agency to place in other municipal positions all disabled or

OVERIDING ALL OBSTACLES

KLEERLINE COUPLINGS

like the mechanized Army tank allow no obstructions to stand in their way.

Of course the mighty tank demoralizes most of its own obstacles but KLEERLINE couplings being *streamlined* glide smoothly *over everything* like a sleigh over snow . . . no protruding lugs to catch in ladders, etc. . . . nothing to wear holes in, or damage stacked hose . . . easier to couple up, and, like the Army tank, sturdy enough to take the hardest bangs.

We are listing orders now for early postwar delivery so when you order your new hose play safe—specify KLEERLINE couplings.

★ **INQUIRIES INVITED FROM RESPONSIBLE DEALERS IN FIRE EQUIPMENT** ★

FASTER
STREAMLINED
BETTER
MODERN DESIGN

ANDERSON FIRE-FIGHTING EQUIPMENT COMPANY, INC.

407 WEST 36th STREET NEW YORK 18, N. Y.

Quality That Means Long Wear... *Plus* Comfort!

GOODALL *Firefighters'* BOOTS and COATS

"GOODALL" BOOTS

Made of durable black rubber. Strong wood "ladder shanks" reinforce arches to ease the strain of long ladder stands. Tough, wide guards at shank provide added resistance to punctures. Black slip-proof soles. Inside and outside gum knee patch. Short, "Storm King" and full-hip lengths, in all sizes.

GOODALL Style 19 FIRE COATS

Designed for severe service . . . and the favorite among firefighters everywhere. Made of dull finish black rubber, with corduroy band collar, square-cut shoulders, strap-and-buckle sleeves. Lightweight, "roomy," comfortable. Length, 46". Sizes, 34 to 46.

OTHER GOODALL PRODUCTS FOR FIREFIGHTING SERVICE

Cotton Rubber Lined Fire Hose, single or double jacket, with or without Underwriters' Label. Chemical Engine or Booster Hose, in wrapped and moulded-and-braided constructions. Fire Engine Suction Hose. Underwriters Unlined Linen Fire Hose.

GOODALL firefighters' hose, boots and clothing are made to specifications based on definite knowledge of service requirements. Our nearest branch or main office will furnish complete information on these good products by GOODALL . . . on the job LONGER!

GOODALL

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia - Trenton - New York - Chicago - Pittsburgh - Boston
Los Angeles - San Francisco - Seattle - Salt Lake City - Houston

Factory — Trenton, N. J. Established 1870

partially disabled returned servicemen. Every consideration will be given our returned men.

Carl J. Kiessling, Chief, Worcester, Mass.: Former firemen who return from the armed forces are reinstated as soon as they comply with certain civil service and fire department regulations for reinstatement.

The time which former members of the department spent in the armed forces is credited to them and they lose no seniority rights because of their service.

At the present time there are no provisions for preference to veterans in promotions. However, we do not know what the future may hold.

The present method of handling former firemen who have been in the armed forces and wish to be reinstated to their former status in the department is as follows:

1. Formal request for reinstatement is made to the appointing authority and to the department of civil service within one year after the termination of their armed forces service.

2. They must exhibit their honorable discharge or a photostatic copy of the same to the department of civil service.

3. They must have a registered physician make out and sign a certificate stating that they are not physically disabled or incapacitated for performing the duties of a permanent fireman, for both the fire department and the department of civil service.

Edward C. Palmer, Fire Marshal, Grand Rapids, Mich.: Veteran's preference applies only to men entering the fire service and has not applied to the members in the department engaging in competitive test for promotion.

Ex-firemen who receive their discharge from the armed forces, after presenting themselves for return to the fire service, are given a medical examination and if physically fit, are reinstated to their former positions with no loss of time due to their absence.

Frank P. Rivard, Acting Chief Engineer, New Orleans, La.: Each fireman discharged from the armed forces when making application to be restored to his former position must undergo a physical examination by the department physician, regardless if he has received a medical discharge or otherwise from the armed forces. If he complies with the fire department regulations, he is restored to his former position.

The Board of Trustees of the Firemen's Pension and Relief Fund has voted to give returning firemen their full pension rights without the payment of any pension assessments accrued during their absence with the armed forces.

Peter Steinkellner, Chief Engineer, Milwaukee, Wis.: Firemen discharged from the armed forces will be reinstated if they entered the service with a military leave of absence from the city. Their time spent in the armed forces will be credited to their seniority in the fire department.

The question of veteran's preference in promotions is now under consideration by the Fire and Police Commission.

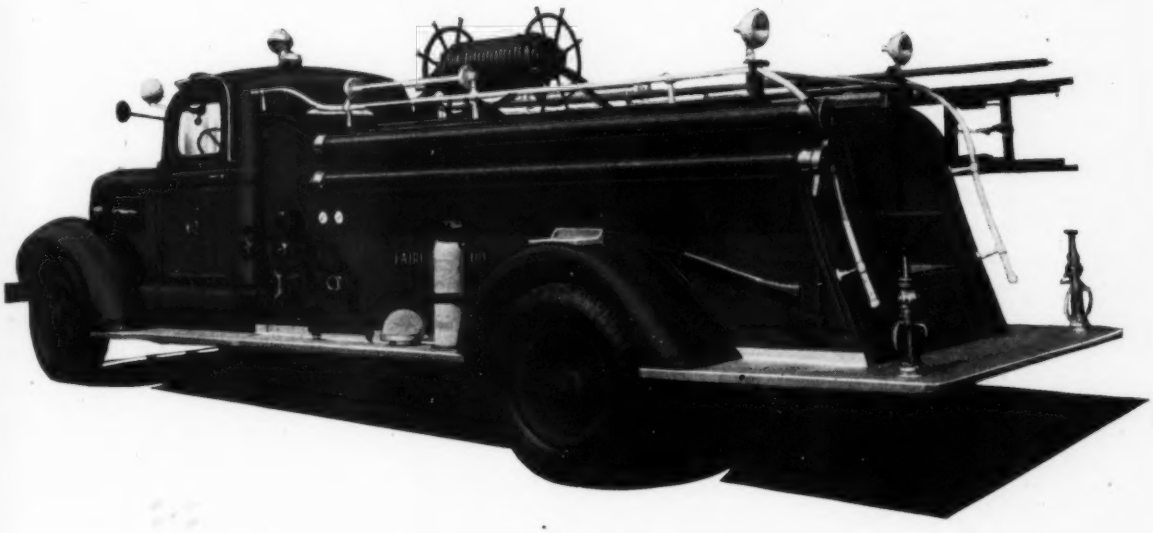
If the condition is such that veterans cannot perform the duties they formerly performed, they will be em-

FIRE APPARATUS

OREN

CUSTOM-BUILT

MODERNIZES ANOTHER DEPARTMENT



A Custom-Built Triple Combination **OREN** with 500 G.P.M. Hale Centrifugal two-stage pump, 200 gallon booster tank, modern ladders and accessories. Mounted on a White Chassis and recently delivered to Fairfield Fire Department, Fairfield, Ohio.

Each truck modernized, designed and built to meet the individual needs of the purchasing fire department . . . combining valuable features of both customer and Oren engineered ideas.

Write for Information and Catalogue

ARMY NAVY

OREN FIRE APPARATUS COMPANY

1201-9 West Salem Avenue

ROANOKE, VIRGINIA

PUMPERS TANKERS

Water causes it to flash and flame up like a fire bomb. The usual fire extinguishers merely add to the combustion. It's a real fire devil. But Pyrene G-1 is standardized protection for this hazard. Developed and designed to kill magnesium fires.

HOW YOU GET MAXIMUM FIRE PROTECTION BY STANDARDIZING ON PYRENE

All Pyrene Fire Extinguishers are precision built of durable materials to give fast positive action on fires and long life for the equipment. The instructions for operation and care are simply stated and plainly stamped on the face of the extinguisher. 38 years of experience, creating, developing and testing new ideas for Fire Protection stand firmly behind the production of standardized Pyrene Equipment for every Fire Hazard. All Pyrene Fire Equipment has been tested, listed and labeled by the Underwriters' Laboratories, Inc., and approved by Factory Mutuals. Standardize, be safe with Pyrene.

BY THE WAY: WHEN DID YOU LAST TEST THE FIRE EXTINGUISHERS IN YOUR HOME?

Pyrene Manufacturing Company

Founded 1907

NEWARK 8, NEW JERSEY

AFFILIATED WITH THE C-O-TWO FIRE EQUIPMENT CO.

ployed in such positions for which they shall be qualified, but at seniority status, pay and salary advancement of the positions they held at the time of taking such leave.

Samuel J. Pope, Chief, Boston, Mass.: Firemen now in the armed forces will be reinstated in this department if they can pass the physical examination.

Time spent will be credited to their seniority in this department.

Unless present legislation changes, veterans do not get preference in promotions.

D. A. O'Connor, Chief, Omaha, Neb.: Firemen in the armed forces are guaranteed their jobs back if they report within sixty days with an honorable discharge.

Time spent in the armed forces is credited to their seniority.

To date, no provision has been made for veteran's preference.

We have no definite rule on how to handle the problem of returning ex-firemen who have received a medical discharge from the armed forces. When our City Council passed resolutions guaranteeing servicemen their jobs, they said nothing about physical condition. One returning veteran physically unfit for fire fighting duty has been assigned to the inspection bureau.

G. R. McAlpine, Chief, Oklahoma City, Okla.: Firemen that were regularly employed members of this department at the time they entered the armed services will be reinstated to their former rank in the department.

The time served in the armed forces will be credited to their standing and their seniority will not be broken from the time of their original employment. They also receive credit for time in the armed forces towards their pension.

Everything being equal, the veteran will be given preference.

Men returning to the fire service from the armed forces with a medical discharge will be required to take a thorough physical examination by a city doctor. If they pass, they are reinstated to their former rank in the service.

We have had several men with medical discharges return. In some cases their injuries were such that they could not do fire department work. In such cases we did not reinstate them.

Allie A. Feldman, Acting Chief, Denver, Colo.: Former firemen are required to make application for reinstatement within sixty days after their discharge from the service before reinstatement will be considered.

The time that is spent in the armed forces is added to their seniority in the department.

Veteran's preference is given in the amount of five points for honorable discharge or medical discharge and ten points for disability discharge in entry and promotional examinations. This is a state law.

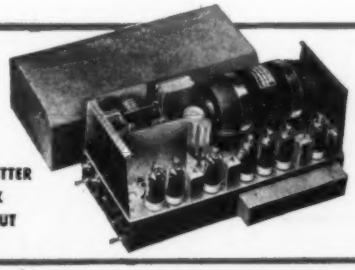
The reinstatement of all returning firemen, medically discharged of otherwise, is contingent upon their passing an examination required by the Denver Civil Service Commission.

Olander Lind, Chief, Kansas City, Kan.: Fully aware of the fact that many of our men would enlist and that others would be drafted, I met with

Again KAAR is FIRST!

KAAR makes 50 and 100-watt mobile FM practical with instant-heating tubes

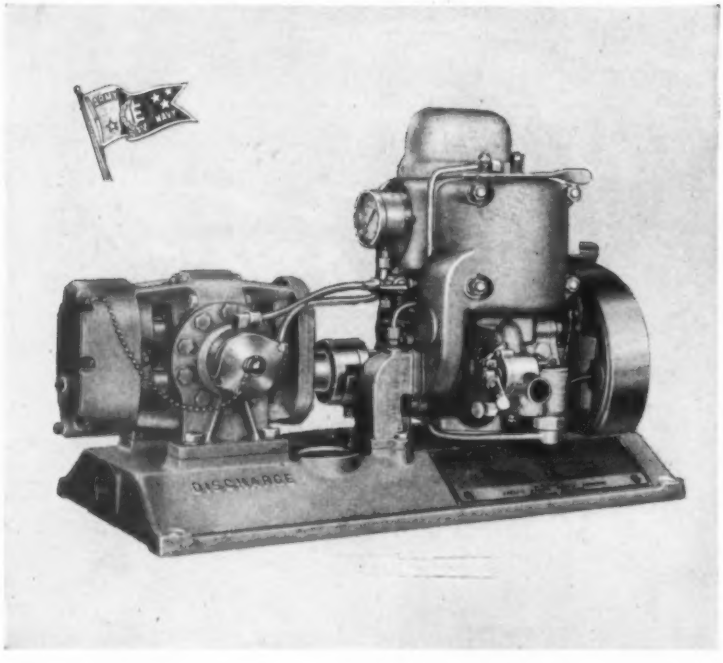
Kaar engineers—who pioneered instant-heating AM radiotelephones—have done it again! In presenting the new KAAR FM-50X and FM-100X, they now give you the advantages of FM *plus* instant-heating tubes . . . greater power and range with lower battery drain! Standby current is zero. Yet the instant you press the button microphone, you are on the air with a full 50 or 100 watts output, improved voice quality, and minimum distortion—sending out a strong, clear message that insures excellent reception.



KAAR FM TRANSMITTER
MODEL FM-50X
50 WATTS OUTPUT

KAAR
KAAR ENGINEERING CO.
ENGINEERING CO.
PALO ALTO • CALIFORNIA
Export Agents: FRAZAR & HANSEN • San Francisco, California

TYPE "Y"
Portable Pumper



While the major part of our manufacturing effort still is confined to production for the Navy, we once again are able to produce a limited quantity of our highly specialized fire-fighting Type "Y" Portable Pumpers for the forestry service, industrial plants and commercial shipping.

For weight and size, Pacific Marine Type "Y" is the most powerful portable pumper yet built. Base, 24 x 12 inches; height, 13 inches; net weight complete, ready to operate, 70 pounds.

CAPACITY

Pressure	100	125	150	175	200	225
Gallons per Minute	63	59	53	46	40	20

Manufactured by the

FIRE-FIGHTING EQUIPMENT DIVISION *of the*

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, Washington

the Mayor and we arrived at the conclusion that our best method would be to simply grant leaves of absence to each man who entered the armed services. In addition, the city adopted a resolution that any city employee who entered the armed services would be assured his position upon his return providing he was honorably discharged.

As for his time credit, that too has been arranged as though he had never left the position he held. He therefore gets full credit on pension and promotional rights.

The veteran will receive additional consideration insofar as new enrollments are concerned. It will not be our policy to take those who are incapacitated merely because he has served in the armed forces. This not only would impair the fire service, but would also be an injustice to the veteran.

The problem of taking back the ex-fireman who has served his country and was injured in such service so as to render him unfit for actual fire fighting is one that will warrant careful study. First of all, he must be given his job back, and secondly, every fire chief wants to do everything for him that he can. But if his injuries are of major proportions so as to interfere with his work as a regular fireman, it then becomes that chief's duty to find other work for him.

In this connection, it will be a golden opportunity for many cities to establish bureaus of fire prevention and use these ex-firemen as inspectors. In that way you would have experienced men who would be more alert to fire hazards than the usually politically appointed ones.

Another place for these incapacitated veterans would be as fire alarm operators. Again you would have the advantage of experienced men who are more acquainted with the running schedules of the various districts.

The veteran will be given every consideration here in our city. The fact that he served his country will in no way take away any of his rights, but on the contrary will give him many credits.

Edward Grenfell, Chief, Portland, Ore.: When members of the Portland, Ore., Fire Department, now in the armed forces, are mustered out, they will be reinstated; the time spent in the armed forces will be credited to their seniority.

They will be given veteran's preference in promotions.

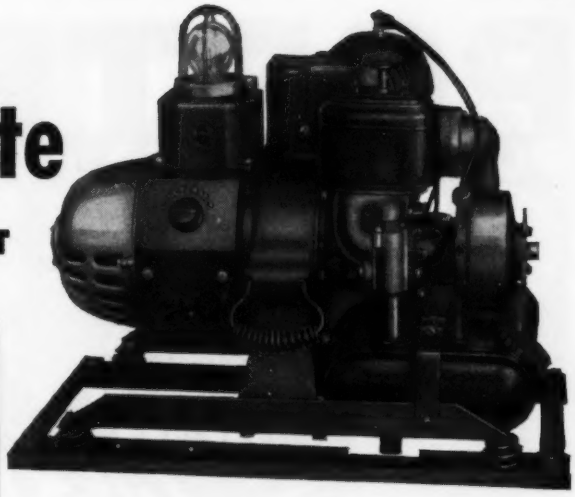
Firemen returning from military service who have received medical discharges will be allowed to return to their former positions, provided they are physically fit to perform fire department duties. If they are not able to perform these duties, they will be allowed the earned portion of their pension, which is $3.00 a month for each year's service, the minimum being $30.00 per month.

C. C. Styron, Chief, Atlanta, Ga.: When a fireman on military service returns to the fire department he is examined by the city physician before he is reinstated in the fire department.

All the time served in the military service is credited towards regular service in the fire department and he is placed in his former position. If

Pick Up a Homelite

AND GIVE YOUR MEN A LIFT



When it's a matter of minutes and lives, portable power for lights and modern demolition tools can save both. In addition to floodlights, a Homelite Gasoline-Engine-Driven Generator will operate electric saws, drills and other electric tools.

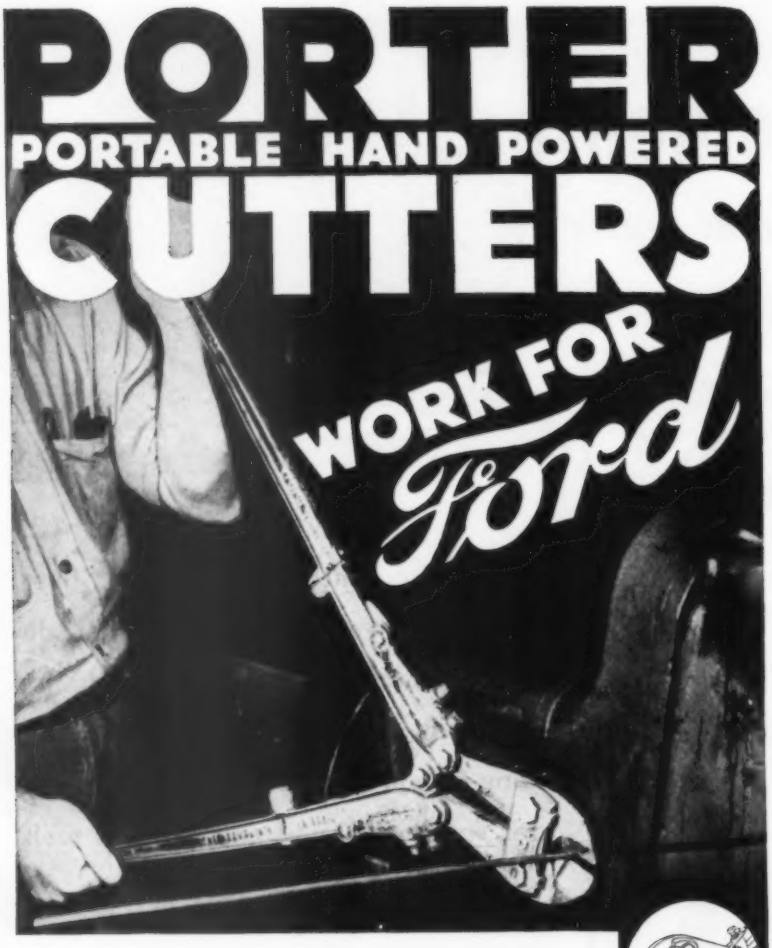
Homelite units cost less to use and maintain because they have a cool running engine that is automatically lubricated by oil which is always new. Morever, Homelites use oversize ball bearings throughout and are equipped with a simplified magneto and automatic built-in governor.

Homelite Corporation

Portable PUMPS • GENERATORS • BLOWERS

PORT CHESTER, NEW YORK

PORTER
PORTABLE HAND POWERED CUTTERS



You can find PORTER CUTTERS in most, if not all, of America's great industrial plants.

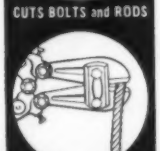
They do production, maintenance and repair work, cutting rods, strips, chains, bolts, wire, wire rope, insulated cable and woven wire.

They press, crimp, punch, caulk, and split nuts; and they do all these things with amazing ease because only pounds pressure on the handles delivers tons power to the jaws.

Porter perfected this powering of cutting tools over 65 years ago. We have kept pace with the ever-increasing toughness and hardness of metals.

Our catalog details capacities and explains power increase through leverage. May we send you a copy? Porter Cutters are sold through Mill Supply and Jobbing Houses everywhere.

CUTS BOLTS and RODS


CUTS WIRE ROPE AND CABLE

CUTS CHAIN

CUTS REINFORCING RODS

H. K. PORTER, INC., 410 ASHLAND ST., EVERETT 49, MASS.

PORTER HKP CUTTERS

he was not drawing top salary at the time he entered the military service, he is given credit for that time towards his pay increases. He is also given the opportunity of paying his pension each month and getting credit for that time towards retirement.

When a fireman on military leave is eligible for a promotion, he receives it. His place is temporarily filled until he returns.

In the event a fireman is not physically able to return to general fire fighting duty, he is pensioned according to his length of service in the department. If a fireman should lose his life in the military service, his widow will receive a full pension, the same as if he were killed in the line of duty.

Albert J. Sullivan, Chief Engineer, San Francisco, Cal.: We have a clear cut policy legalized by the enactment of proper ordinances which provide:

1. When former firemen (with civil service status) now in the armed forces are mustered out, they will be reinstated in their former positions.

2. The time spent in the armed forces is regarded as equivalent to service in the department and is credited to their seniority rights therein.

3. They will receive veteran's preference on promotional civil service examinations, expressed in credits amounting to three points.

To date we have two members who have received medical discharges and whose condition will prevent their ever resuming their full regular duties as firemen. We hope to be able to continue these in some capacity where they can serve out their time until retirement, but we will require some legislative authority before this can be accomplished. Meanwhile, we continue their status as members off duty on military leaves.

"Safety" Gasoline

From confidential sources it is disclosed that the post-war civilian market may see a new "non-explosive" gasoline which will meet a vast commercial and industrial demand, and which, incidentally, will be received with acclaim by the fire service.

It is claimed that this product, which in trade circles carries the name of "safety gasoline," has been tested and used extensively by the army and navy. It is said that the new fuel isn't actually *non-explosive;* the best description is that it is a kerosene which has a very high octane rating and will be just as effective in aviation, for example, as present high-octane gasoline, but when spilled, it will burn and *not* explode. It is said it won't even burn unless something acts as a wick. Yet under high compression and great heat, it explodes as effectively as the best gasoline.

Already it is taken for granted in some circles that all passenger airplanes will use the new gas as soon as it is available. Consideration is also being given it in material-handling where the gasoline engine is a potent fire hazard.

It is stated that to burn the new fuel it is necessary to use either injectors or a new type of carburetor, but that such adjustments may be easily made and that almost any gasoline engine can be adapted to use the new fuel.

EFFECT OF Climate? NONE!

AT VIRTUALLY any point of latitude or longitude MEARLFOAM-5 the war-born, blended, multi-protein foaming agent can be depended upon to produce live, long-lasting, fire-smothering foam in specified volume. For example: with a range of water temperatures (*sea water and fresh water*) from 35° to 70°F. the foam volume (gpm) generated shows insignificant variation only—a variation so infinitesimal, that it serves to enhance the reputation of MEARLFOAM-5 for top-flight fire-extinguishing performance in a wide range of climatic and atmospheric conditions. *Effect of climate? NONE!*

The many unique and dependable properties of MEARLFOAM-5 are the sole reasons the U. S. Navy uses it extensively for preparedness . . . and for the quick extinguishment of raging gasoline and oil fires on shipboard and at shore bases. MEARLFOAM-5 is the veteran of many successful engagements, and one day will demonstrate to all—the super effectiveness of mechanical (air) foam as the most successful method for combatting gasoline and oil fires. MEARLFOAM-5, after putting fire out—*keeps it out* . . . totally eliminating the flashback hazard which in the past has taken such a terrible toll of lives and property.

MEARLFOAM-5 is a good-mixer—with any type of water: *sea water, fresh water, hard or soft water.* It works at maximum efficiency in any climate or atmospheric condition. Its performance is practically constant and invariable over a wide range of conditions. When split-seconds count—you can rely on MEARLFOAM-5 to put fire out fast—to keep fire out *permanently!*

A one-page condensed data sheet detailing the unique properties of this war-born fire-fighting foam is now available on request. Please ask for it.

Completely safe and non-corrosive—may be used with standard Mechanical Foam-Forming Equipment

FOAM ON FIRE OUT... Stays OUT!

THE MEARL CORPORATION
153 Waverly Place, New York 14, N.Y.

Manufacturers' Announcements

Riepling Universal Nozzle Bulletin

George E. Sleeper Company, Oakland, Cal., has published a new bulletin on the Riepling Universal Nozzle, picturing and describing its multi-use characteristics and features.

Grinnell Flamebuster

The Grinnell Company, Inc., Providence 1, R. I., has announced their new three-purpose nozzle called the Flamebuster.

This new piece of fire fighting equipment has been developed particularly for fighting fires in oils and other flammable liquids. It permits the application of water in the form best suited for quick control, according to the nature of the fire. The operator, by shifting the valve handle, has at his disposal either spray or solid stream. Choice of high or low velocity spray is made by attaching the proper tip to the nozzle by means of a simple bayonet-type catch.

For extinguishing stubborn fires in light, flammable liquids the low velocity spray tip on a four or ten-foot applicator discharges a wide angle cone of evenly distributed, fine spray directly over the blaze.

For extinguishing fires in heavier oils, a driving spray from the high velocity tip emulsifies the blazing oil and renders it incapable of burning. It affords the fireman excellent protection in approaching the blaze.

For mopping-up operations on wood or similar materials ignited by oil fires and burning beyond the range of spray, the solid stream is immediately available.

New Extinguisher Announced by American-LaFrance

A new fast-acting portable fire extinguisher is announced by American-LaFrance-Foamite Corporation of Elmira, N. Y.

Alfite Speedex Extinguisher

It is the Alfite Speedex made in three different sizes, Models 15, 10 and 4, and uses carbon dioxide as the fire extinguishing agent. The numbers indicate the pounds capacity of the gas.

This new unit is engineered to more speedily extinguish small oil or electrical fires, with no loss of the important extinguishing gas on anything but the fire itself.

The Speedex operating valve lever is directly above the carrying handle. It

Discharge of Speedex Extinguisher

can be instantly opened by the pressure of the hand grip and as quickly closed by releasing the hand pressure while operator is maneuvering his position.

MR. FIRE CHIEF!
PROTECT Your FIREMEN With The ACME FULL VISION GAS MASKS
(Approved by U. S. Bureau of Mines)

ON TO TOKYO
BUY BONDS

SAFE
COMFORTABLE
DEPENDABLE

Every Fire Chief is entrusted with the Safety of his firemen, and should replace all inefficient masks with new ones, and purchase additional masks for emergency purposes.

The Acme Type FD All-Purpose FULL VISION Gas Mask has been especially built for the maximum service of firemen, and has met every test under actual fire conditions.

This Acme Mask and Canister protects against Carbon Monoxide, Organic Vapors, Ammonia Fumes, Acid Gases, Toxic Smokes, and Smoke Suffocation.

WRITE FOR ILLUSTRATED FOLDER and PRICES

ACME PROTECTION EQUIPMENT COMPANY, INC.
Manufacturers
616 LIBERTY AVENUE Cable Address ACMEPROCO PITTSBURGH, PA. U S A

WaterFOG STEPPED ON THE FLAMING GAS

. . . before the heat reached the sprinkler heads

A flashing arc ignited volatile gases inside this enamel-drying oven. The WaterFOG system inside the oven was immediately opened by the automatic fire detection device, releasing clouds of WaterFOG which blanketed the oven . . . rapidly absorbing heat from the flames and shutting off oxygen. So quickly was the fire under control that not enough heat reached the top of the room to actuate the sprinkler heads only eight feet directly above the tank!

Reporting on this fire, Donald B. Swain, General Superintendent of the Millers Falls Company, Greenfield, Mass., writes: "We cannot see how it would be possible for any form of fire protection to function more perfectly and efficiently than this did."

Rockwood WaterFOG Offers You Surest Protection

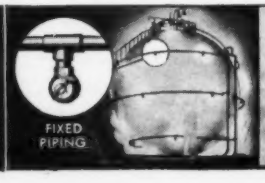
WaterFOG . . . water broken up into particles much finer than spray . . . attacks flammable liquid fires three ways. Soaks up heat necessary to sustain combustion. Retards vaporization. Closes off oxygen supply. WaterFOG's gentle action avoids splashing the oil . . . flash-back is prevented because the surrounding structure is cooled.

Rockwood WaterFOG is created by impinging streams of water against each other at scientifically determined angles to produce particle sizes, fog pattern and velocities required for each installation. Rockwood-engineered fixed installations, nozzles and applicators for fire hose lines . . . are used by industrial plants, refineries, utilities . . . approved by Underwriters' Laboratories and Associated Factory Mutuals. Write for Bulletin 123. Natural color movies (16mm.) showing tests of Rockwood WaterFOG are available to city officials and business executives.

ROCKWOOD SPRINKLER COMPANY
54 Harlow Street, Worcester 5, Massachusetts
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires

ROCKWOOD WaterFOG



For continuous operation the D-yoke ring is slipped over the operating lever while it is depressed.

All models are approved by Underwriters' and Factory Mutual Laboratories. Models 4 and 15 also carry the approval of the U. S. Coast Guard.

Edison Voicewriter Literature

Thomas A. Edison, Inc., West Orange, N. J., has issued a folder about the "Edison Electronic Voicewriter" which instrument, it is claimed, clearly records any sound within eight feet and has facilities for making and playing back amplified record of speeches, interviews, dictation, conference proceedings, wire-carried conversations, etc. The Voicewriter is said to have special advantages for use in fire alarm communication.

General Detroit Folder

The General Detroit Corp., 2272 E. Jefferson, Detroit 7, Mich., has issued a broadside about its new Red Star 2½-gallon soda acid extinguisher. Six new features of design and construction are listed.

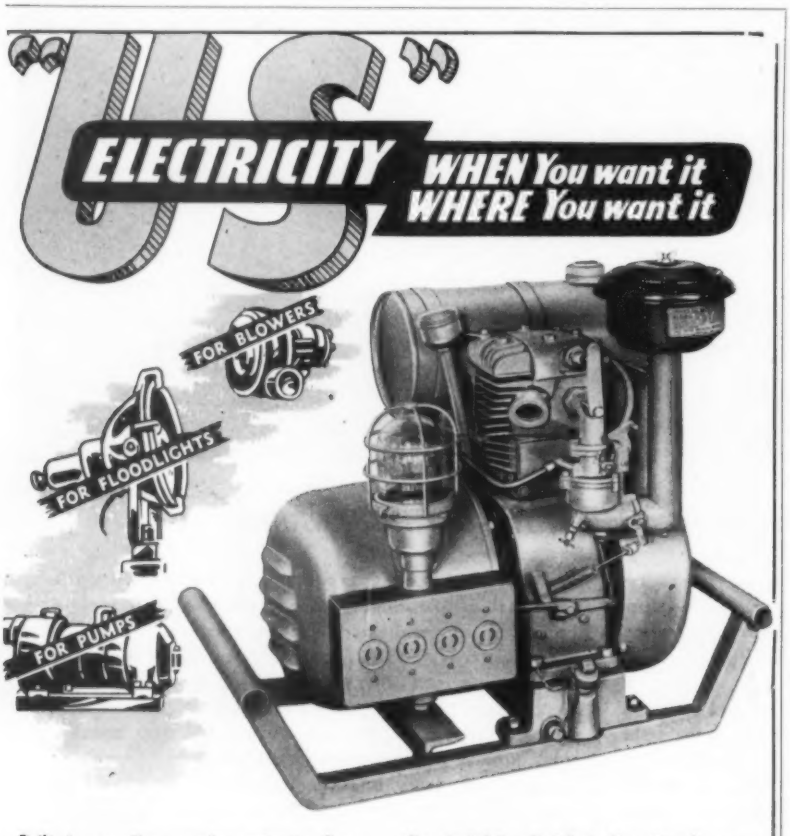
Pumper Dedicated to Lieutenant

First Lieutenant George Edmund Flannery, 596 Air Borne Engineer Company, of Pasadena, Cal., was killed in action in Italy, June 25, 1944, but his name and record will live in the annals of his home city as a result of action taken by the Fire Department in a special dedication service held June 6, 1945.

Lieutenant Flannery, who rose from private to the rank he held at death, was on military leave from the Department. Following his death, the City decided to perpetuate his memory by dedicating its newest 1,000 gallon pumper, just completed by the Seagrave Corporation, to him with appropriate ceremonies.

The ceremonies, held in front of the City Hall, were attended by officials of the city.

The commemorative placque, affixed to the side of the big pumper, was unveiled by John Freeman Flannery, Y/3c, brother of Lieutenant Flannery.



Built to exacting requirements—to fire department specifications. . . . Designed to stand up under the hard usage and difficult conditions a Fire Department Portable has to meet! In service with leading fire departments, these rugged 1500 watt Units have *proved* themselves capable of meeting every emergency.

Dependable. Quick-starting 4-cycle engine. Positive lubrication.

Start it and forget it! Automatic voltage regulation under all loads. No adjusting necessary. No fussing to mix gasoline and oil.

Compact. An easy load for two men.

Larger and smaller sizes available. Write for further information.

UNITED STATES MOTORS CORPORATION

430 Nebraska Street **Oshkosh, Wisconsin**

ARMY (E) NAVY

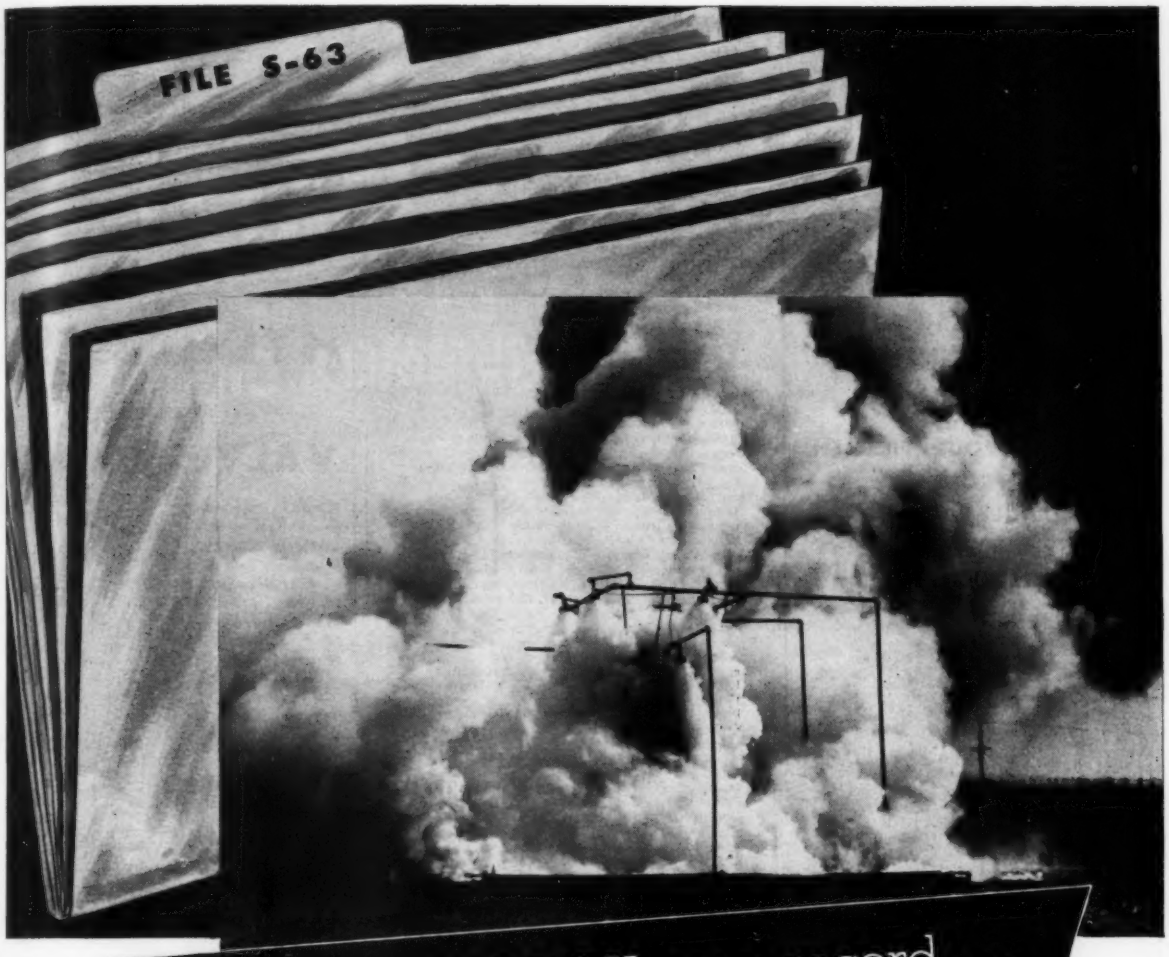
Distributed by:

Alan Pointen	Hanover, Massachusetts
Smith-Meeker Engineering Co.	125 Barclay St., N. Y. C. 7
D. S. Bachman	Durham, Pennsylvania
C. A. McDade Co.	6526 Hamilton Ave., Pittsburgh 6, Pa.
U. S. Electric Plants	Box 2052, Sta. V, Los Angeles 3, Cal.
Atlas Engine Co.	Salmon Bay Terminal, Seattle 99, Wash.
Loggers & Contractors Mach. Co.	240 S. Clay St., Portland, Ore

What's Burning

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of June, 1945. These figures, compiled from telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending June 30	Losses in Thousands of Dollars
Ottawa, Ont.—St. Patrick's Roman Catholic School damaged	60
Portland, Ore.—Northwestern Ice & Cold Storage Plant destroyed	85
Dallas, Tex.—Western Newspaper Union, Corner Package Store, Fairmount Pharmacy, Summers Electric Co., Hunter Sales Co. and Acme Amusement Co. damaged	80
Waycross, Ga.—Atlantic Coast Line freight station and 32 loaded box cars destroyed	425
St. Louis, Mo.—Bldg. occupied by Royal Bond Co., Koelle-Mueller Label Co. and Nolte Brokerage Co. damaged	50
Louisville, Ky.—Plant of City Hide & Tallow Co. destroyed	125
Camden, S. C.—Finishing plants of the Rower Veneer Co. destroyed	50
St. Thomas, Ont.—Grand Central Hotel damaged	125
Decoto, Cal.—New Colma Mill & Lumber Co. lumber and planing mill damaged	170
Indianapolis, Ind.—Nine barracks, Fort Benjamin Harrison, destroyed. Prison break attempt and riot	80
Bardstown, Ky.—Distillery bldg. and fermenting room of Barton Distilling Co. destroyed	170
Nashville, Tenn.—The brickyard of W. T. Bush & Co. damaged	50
Canton, Ohio—Castamall recreation bldg. destroyed	80
San Carlos, Cal.—Coating plt. and whse. of the Welco Co., welding rod mfrs., damaged	50
San Francisco, Cal.—West Silver Plating Plt., airplane parts, destroyed	170
Twin Falls, Ida.—C. C. Anderson Dept. Store destroyed	250
Michigan City, Ind.—Plant paint shop of the Pullman Standard Car Mfg. Co. damaged	170
Ottumwa, Ia.—Stevens Shoe Co. bldg. damaged; adj. Wareham-Burns women's store and Newberry's store damaged	80
Gary, Ind.—The Montgomery Ward & Co. store damaged	450
Muskegon, Mich.—Lakeside Lumber Co. yards damaged	60
Pittsburgh, Pa.—National Cylinder Gas Co. plant, Noon Township, destroyed; two dwellings and plant of Canfield Oil Refining Co. and Pittsburgh Forge Co. damaged	100
Marshall, Tex.—Loading shed at Daroo Corp. plant destroyed	80
Prince Rupert, B. C.—Billmore Spruce Mills, Ltd., damaged	225
Cambridge, Mass.—Porter Trucking Co., City Trucking Co., the Solomon Glass Co.,	



from the CARDOX case record . . .

Out of actual on-the-job fire experience comes evidence of the ability of Cardox Fire Extinguishing Systems to stop even *big* fires *fast*. File No. S-63, taken from an investigator's report on Cardox extinguishment of a tough transformer fire is a typical example:

"The fire occurred in the outdoor transformer area. It was caused by a short in the 2500-volt bus section and quickly ignited a protective screen above the busses. This protective screen consisted of burlap, rubber sheeting and plywood.

"The Cardox System was actuated automatically and worked perfectly . . . in less than a quarter of a minute (after mass discharge of Cardox CO_2 began) the fire was extinguished. No serious damage was done and operations were resumed after a very small delay. The swift and efficient operation of the Cardox System prevented at least $150,000 damage."

The danger spots in your plant may not be similar to the one described in FILE S-63. But, if for example they involve flammable liquids or electrical equipment of any kind, Cardox offers maximum protection with fast-acting, non-contaminating carbon dioxide . . . in *pounds* for small fires . . . and *tons* for large ones!

For all Cardox Systems have one outstanding characteristic which greatly increases the scope of usefulness and performance value of carbon dioxide in protecting *large* and *small* hazards!

This characteristic is the distinctive Cardox method of control and engineered application of liquid carbon dioxide, stored at 0° F. and 300 p.s.i. in a single storage unit containing from ¼ to 125 tons of fire-destroying Cardox CO_2 . . . enough to handle large fires in single or multiple hazards and leave an ample reserve for new emergencies!

If you have fire problems that are hard to handle, low pressure carbon dioxide can frequently provide the effective answer. A study of your specific fire hazards by Cardox Research Division and Engineering Staff puts you under no obligation. Write for Bulletin 1975.

CARDOX CORPORATION
BELL BUILDING • CHICAGO 1, ILLINOIS
District Offices in
New York, Washington, Detroit, Cleveland, Atlanta, Pittsburgh, San Francisco, Los Angeles, Seattle, San Diego

Cardox CO_2 is supplied instantly in pounds or tons from a single Storage Unit containing 500 pounds to 125 tons at controlled low temperature of 0°F. and 300 p.s.i.

CARDOX
CO_2 FIRE EXTINGUISHING SYSTEMS

ECONOMIZE

WITH

NOZZLE PRESSURATERS

By

INCREASING PUMPER EFFICIENCY

•

PROTECT YOUR FIREMEN FROM AVOIDABLE ACCIDENTS CAUSED BY EXCESSIVE NOZZLE PRESSURES

The Nozzle Pressurater installed at the engine instantly and accurately measures velocity stream pressure at the nozzle and rate of discharge in G.P.M.

•

Write for Descriptive Bulletin No. 171-1

•

Attention Manufacturer's Representatives. Your territory may be open.

Write to:

BARTON
INSTRUMENT COMPANY
2306 East 38th Street
LOS ANGELES 11, CALIF.

the Statbtker Steel Co. and the E. T. Stratton Trucking Co. damaged..... 80

Phoenix, Ariz.—Basha's Market damaged.. 50

Houston, Tex.—Bldg., Katy Highway, occupied by grocery store, cafe and plumbing shop and apartments, and an adj. warehouse damaged 50

San Jose, Cal.—Individual Laundry destroyed 50

Williams, Cal.—Mammoth Farmers Warehouse and the aux. bldgs. destroyed..... 250

Fort Erie, Ont.—Clubhouse of Erie Downs Golf and Country Club damaged..... 60

Daytona Beach, Fla.—Hoffman Novelty Works damaged 125

Savannah, Ga.—Reynolds & Manley Lumber Co. plant damaged..... 80

Albuquerque, N. M.—Lumber yards, office and paint shop of Albuquerque Lumber Co. destroyed 50

Marion, Ind.—William T. Brownlee School destroyed 170

Red Bluff, Cal.—Packing plant of Minch Wholesale Meat Co. destroyed..... 80

Port Alberni, B. C.—Barge Island carrier destroyed. Ignition of sawdust..... 60

Vancouver, B. C.—Saneway genl. store, McLoughlin Heights, destroyed. Hot motor refrigerator 100

Hamilton, Ont.—Plant of Hamilton Potteries damaged 170

Floral Park, L. I.—Tech Aircraft Specialities Co., Inc., damaged..... 22[e]

Terre Haute, Ind.—One plant of Highland Iron & Steel Mill destroyed; Pennsylvania Railroad engine house damaged. Windstorm 50

Walla Walla, Wash.—Washington Co-operative Farmers Warehouse destroyed..... 50

Alameda, Cal.—United Engineering Yards floating drydock, transport and pier..... 125

San Francisco, Cal.—Intl. Paint Co. plant damaged 50

Fresno, Cal.—Sun-Maid Raisin Growers Assn. plant, Bolas, damaged..... 800

Fresno, Cal.—Woodward Bldg. occupied by E. E. Elzea motor shop, Streit's Drapery House, Barker Bros. furniture store, Portal Corp., John R. Paloutzian's Shoe Store, Collins' Bar and apartments, damaged 50

San Francisco, Cal.—Wesco Machinery Mfg. Co. destroyed; Los Angeles-Seattle Motor Express Co. whse. and the Inland Freight Lines destroyed; West Disinfecting Co. store room annex destroyed; also office annex of Hahm & Co. damaged 200

Fitchburg, Mass.—Bldg. occupied by Cleghorn Pharmacy, Brookelman's Cleghorn Market and 20 apartments..... 50

Seattle, Wash.—Empty hold of a Navy cargo vessel on waterfront..... 425

Toronto, Ont.—Storage plant of Lake Simcoe Ice & Fuel Co. damaged..... 50

North Little Rock, Ark.—Stanley garage destroyed; Franklin Hotel above garage and bldg. occupied by Mayflower Dairy Co. and rooming house damaged..... 50

Salina, Kan.—Weber mill destroyed..... 125

Philadelphia, Pa.—Lu Lu Temple destroyed. Short circuit 250

Quincy, Cal.—Planing mill and box factory on Gray's Flat, operated for Plumas Box Co., destroyed 80

Portland, Me.—Canning shed and boiler house of Ramsdell Packing Co., Back Bay Dock, destroyed 50

Dover, N. H.—Freaman Block, occupied by clothing store of Isadore Freaman and four apartments, destroyed. Rubbish..... 50

Coos Bay, Ore.—City dock and warehouse destroyed; Steamship Bandon damaged... 60

San Jose, Cal.—Tool house, dwelling and several outbuildings on Dr. F. E. Parker estate, destroyed..... 50

Detroit Lakes, Minn.—Wilcox Lumber Co. yards destroyed..... 80

Brownburg, Ind.—U. W. Parsons Lumber Co. destroyed..... 50

Denver, Col.—Warehouse and another bldg. at Rocky Mountain Arsenal destroyed.... 60

Seattle, Wash.—Briscoe Memorial School damaged 50

Fairbanks, Alaska—Women's Army Corps barracks destroyed..... 50

Chico, Cal.—Plant of Salcedo Meat Co. destroyed 125

Jacksonville, Fla.—Nelio Resin Processing Co., Norwood, damaged. Sparks from Resin vat 80

Galesburg, Ill.—Galesburg Soy Products Co. damaged 350

Batimore, Md.—Three-story bldg. belonging to the Oblate Sisters of Providence damaged 60

Baltimore, Md.—Two bldgs. of the Seaboard Asphalt Products Co., Wagner's Point, damaged 150

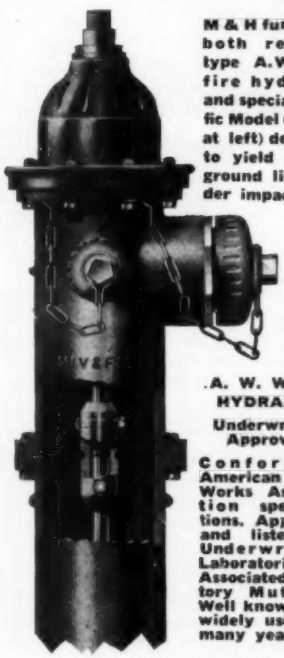
Sacramento, Cal.—Friend & Terry Lumber Co., river waterfront, destroyed..... 60

Cleveland, Ohio—Bldg. occupied by Brunswick-Balke-Collender Co., M. D. Simon Co. and Forest Garment Co., damaged. 80

M&H

HYDRANTS and VALVES

Expert workmanship and highest quality materials make M & H products a good investment always. Many years of use in all sections of the country has proved their ruggedness and dependability.



M & H furnishes both regular type A.W.W.A. fire hydrants and special Traffic Model (shown at left) designed to yield at the ground line under impact.

A. W. W. A. HYDRANTS

Underwriters Approved

Conform to American Water Works Association specifications. Approved and listed by Underwriters' Laboratories and Associated Factory Mutuals. Well known and widely used for many years.

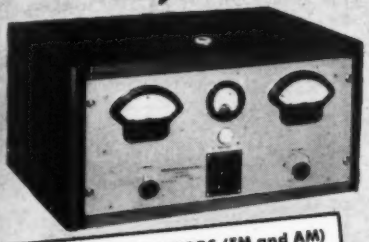
Write for Catalog No. 34

M&H VALVE AND FITTINGS COMPANY

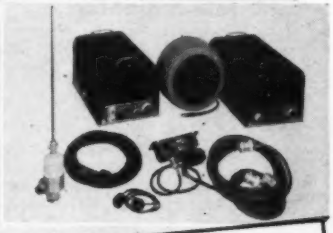
ANNISTON, ALABAMA

Complete Matched FM and AM RADIO COMMUNICATION EQUIPMENT

Engineered and Built by Doolittle



FREQUENCY MONITORS (FM and AM)
Direct reading. No charts or complicated calculations necessary. Models available for 110 Volt A.C. or battery operated portable use. Meet FCC requirements.



MOBILE EQUIPMENT (FM and AM)
Models up to 60 watts output. Crystal controlled. Complete with Transmitter, Receiver, Power Supply and all Accessories.

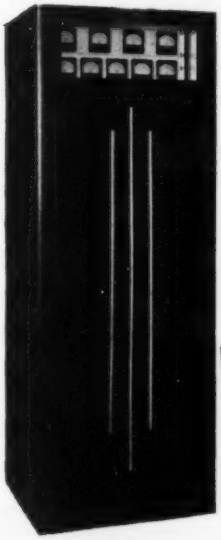
CONCENTRIC TRANSMISSION LINE
Sizes available from ⅜" to 3" diameter. Seamless copper tubing with wide variety of sealed terminals for any application. • STATION ANTENNAE of various types available to suit your requirements.

TIME TELLS. Equipment engineered and built by DOOLITTLE years ago still serves today . . . 24 hours a day . . . without interruption.

That's because DOOLITTLE pioneering work back in the days of emergency radio's infancy was basically sound.

When war came, DOOLITTLE engineering and production facilities were enlisted for the *Naval Aircraft Factory* and the *Bureau of Aeronautics.*

Turn all this experience to your advantage. Build the success of your emergency forces around FM or AM equipment *completely engineered, built and matched by DOOLITTLE.*



With such equipment in your service . . . many benefits are yours today . . . and will still be yours years from now!

A FEW OF THE MANY ADVANTAGES

Low Power Consumption • Maximum Coverage • Latest Electrical and Mechanical Design • Compact Easy to Install • Simple to Service Proved Reliability

STATION TRANSMITTERS (FM and AM)
18 available models. Power output up to 1000 watts. Assure maximum efficiency, absolute reliability and economical maintenance. • Station Receivers, Control Units and Accessories to meet your needs.

Doolittle **RADIO, INC.**

7421 S. LOOMIS BLVD., CHICAGO 36, ILL.

Builders of Precision Radio Communication Equipment for Police, Fire, Government, Forestry, Railroad, Public Utility and other emergency services.

Barton Front Mounted

AMERICAN-MARSH PUMPS

Barton-American Midship

FIRE APPARATUS
CENTRIFUGAL PUMPS

FRONT MOUNTED FOR EASE OF OPERATION

AUTOMATIC VACUUM PRIMER

HIGH PRESSURE AT LOW ENGINE SPEED

BOOSTER TANK OPERATION WITH TRUCK IN MOTION

Offered in capacities from 250 to 600 G.P.M.

AMERICAN-MARSH PUMPS, INC.

Battle Creek, Michigan, U. S. A.

new

2000 WATT

PORTABLE — GENERATING PLANT

Designed to produce the maximum output per pound weight, plant is particularly suitable where portability is a factor.

Meets the standards of the aircraft service. Over 100,000 are now in use in the armed forces.

Truly a heavy duty, high capacity, lightweight, sturdy, streamlined, compact and portable plant. Will stand the most severe operating conditions.

A complete line of floodlight projectors, extension cords, live circuit reels and receptacle boxes.

Write now for complete details.

Security FIRE EQUIPMENT CO. 1550 PRINCETON AVENUE TRENTON, N. J.

Persons in the News

Lester Wiley of Denison, Ia., was elected president of the Iowa Fire Chiefs Association. Sam Long, Ames, Ia., was made vice-president.

Addison Marvin, ex-chief, Stewart Manor Fire Department, was re-elected as chairman of the Fire Chiefs' Mutual Aid of the First Battalion District, Nassau County, New York. The mutual aid plan went into operation June 15 among the fire departments of New Hyde Park, Floral Park, Bellerose, Bellerose Terrace, Garden City, Garden City Park, Stewart Manor and Mineola.

Assistant Fire Chief Henry M. Klein made top score in Denver, Colo., civil service examination for the position of fire chief, with an average of 93.14. Captain Franklin Sopher, high man on the eligible list for assistant chief, will fill Chief Klein's place.

Chief Klein was born in Denver December 4, 1897; educated in Denver schools; served four years in the Navy. He was appointed fireman March 1, 1921; promoted to rank of lieutenant August 1, 1928 and assistant chief November 16, 1940.

Sheriff George Kieckbusch, Townsend, Mont., was made rural fire chief to supervise fire wardens of rural districts and mountain regions under the state's fire control set up.

Frank M. Preston who has been acting chief of the Glens Falls, N. Y. Fire Department, has been promoted permanently to the rank of Chief. Captain William F. Haviland has been promoted to Assistant Chief and First Grade Fireman James T. Brady to the rank of Captain.

James D .Herrity of the M. E. Haley Hose Company, Matawan, N. J., was elected chief of the Fire Department. Clarence Stultz, now in the armed forces, was reelected assistant chief; Charles A. Matz assistant chief to serve until Stultz returns; William Wilkins was elected second assistant and Wallace Larson, third assistant chief.

Grant Short was elected chief, Apalachin, N. Y., Fire Department.

Everett Shadic, Craryville Fire Co. No. 1, was elected chief and Russell Smith assistant chief, Craryville, N. Y. Fire Department.

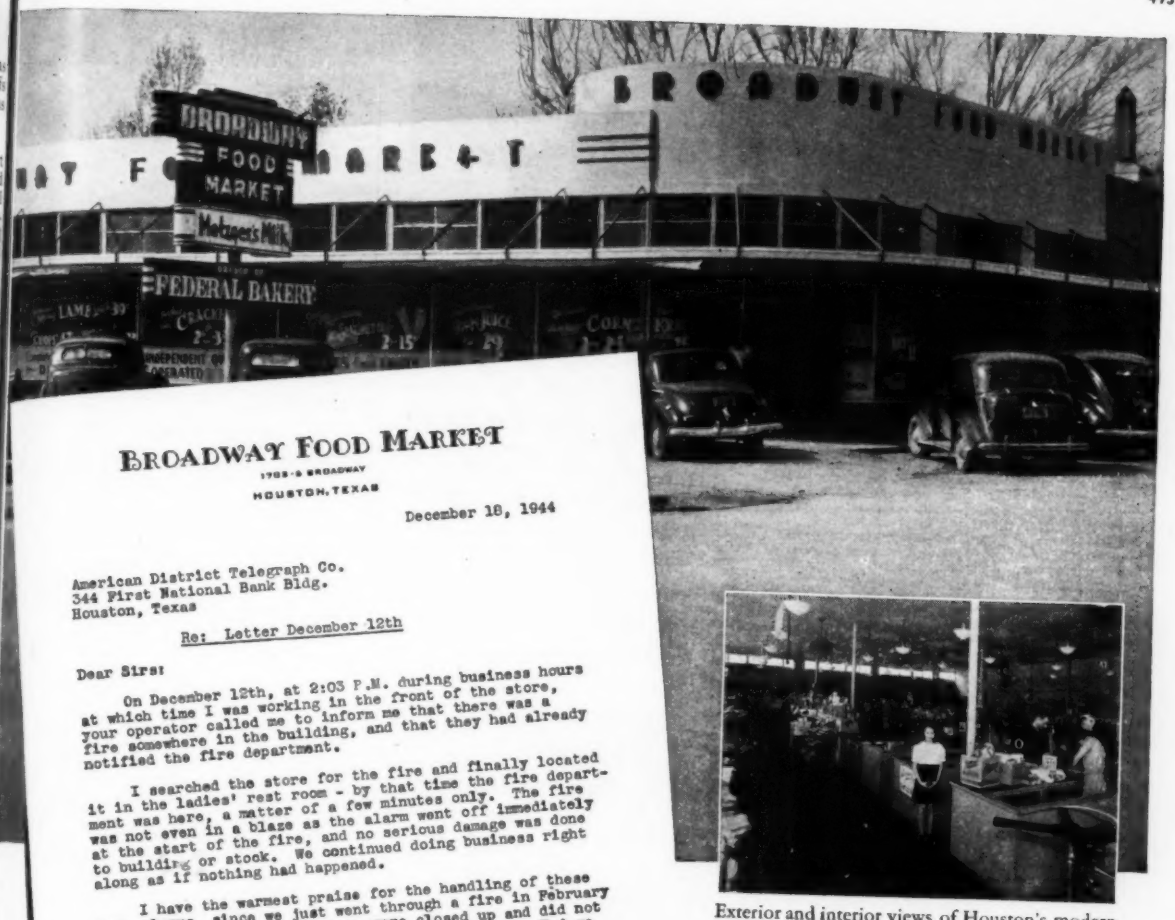
Charles Warner is now chief, Avoca, N. Y., Fire Department.

Frank Ewton was appointed fire chief in Yuba City, Cal.

Joseph F. Donaldson, Safety Director of Louisville, Ky., has announced the appointment of Fire Captain Harold L. Foster as Battalion Chief in charge of city fire prevention work. Foster has been a member of the department since 1931.

Assistant Chief Mahlon E. Georg has retired from the Fort Dodge, Ia., Fire Department. He joined the department in 1911.

Clifford M. Butler, 43, formerly a platoon captain in the Fort Wayne, Ind.,



BROADWAY FOOD MARKET
1703-5 BROADWAY
HOUSTON, TEXAS

December 18, 1944

American District Telegraph Co.
344 First National Bank Bldg.
Houston, Texas

Re: Letter December 12th

Dear Sirs:

On December 12th, at 2:03 P.M. during business hours at which time I was working in the front of the store, your operator called me to inform me that there was a fire somewhere in the building, and that they had already notified the fire department.

I searched the store for the fire and finally located it in the ladies' rest room - by that time the fire department was here, a matter of a few minutes only. The fire was not even in a blaze as the alarm went off immediately at the start of the fire, and no serious damage was done to building or stock. We continued doing business right along as if nothing had happened.

I have the warmest praise for the handling of these fire alarms, since we just went through a fire in February of this year, at which time we were closed up and did not know of the existing fire until six hours later. Had we had the Aero fire alarm this would not have occured.

Again let me say it is wonderful and gives one a feeling of security and rest. Thanks a lot.

Very truly yours,

BROADWAY FOOD MARKET

BY M L Sanford

MK:EMC

Exterior and interior views of Houston's modern Broadway Food Market—protected by the A.D.T. Aero Automatic Fire Alarm.

EVERY *Minute* COUNTS ...WHEN FIRE STRIKES!

The letter reproduced above provides convincing evidence of the speed of the AERO AUTOMATIC FIRE ALARM in detecting fire and summoning fire-fighting assistance when it is most needed...in this instance *before the fire was discovered by those on the premises.*

Write for descriptive booklets which explain in detail how this remarkable system eliminates the hazard of belated discovery and delayed alarms.

AERO AUTOMATIC FIRE ALARM

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York*

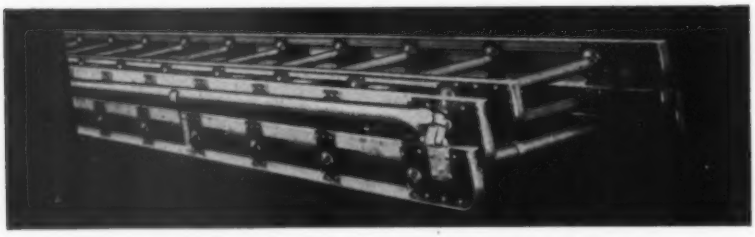
CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

A.D.T

Electric Protection Services

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION



Again Available
STRONG-LIGHTWEIGHT
Aluminum Ladders

★ Reallocation of aluminum by the government permits the manufacture of a limited number of fire department and industrial ladders. The three section, aluminum, heavy duty extension ladder illustrated is type 3 EL. Its unusual strength combined with remarkable light weight makes it one of the most popular fire ladders ever designed. Because of these characteristics . . .

. . . a 65 foot ladder of this type can easily be raised by four men and a supervisor — an impossible feat with ladders not made of aluminum.

FOR GREATER SAFETY AND EASE OF HANDLING

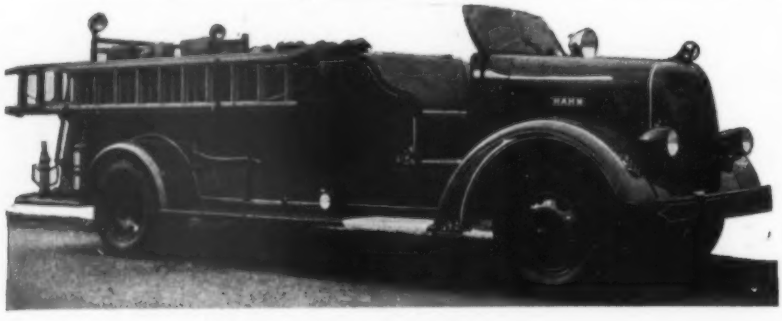
The locks operate automatically at any desired point during ladder extension. The rope and flexible cable are arranged for simultaneous automatic extension of both flies.

★ ★ ★

Write for information on standard sizes and aluminum ladders built to specifications

Aluminum Ladder Company

200 Carbis Street
Worthington, Pennsylvania



"HAHN" FIRE APPARATUS
SINCE 1907

FINEST IN THE WORLD ★ STREAMLINED ★ BALANCED CHASSIS ★ AMPLY POWERED ★ VERY EFFICIENT PUMPS WITH PLENTY IN RESERVE

HAHN MOTORS, Inc.
HAMBURG, PA.

Fire Departmen, has been advanced to battalion chief to fill a vacancy created when Fred W. Goeglein became chief.

Captain Fred Swensen has been named secretary of the Davenport, Ia. Fire Department to fill vacancy caused by promotion of James Quinn to assistant chief.

Harry J. Poling, Eagle Hose Company, Keyport, N. J., was installed as fire chief; Charles Kinhafer is first assistant and David C. Schanck is second assistant chief.

Jack Campo was re-elected chief of the Groveland, N. Y. Volunteer Fire Department. Paul Rider is assistant chief.

Chief Floyd Pfaender Passes

Chief Floyd Pfaender, Secretary of the Florida State Firemen's Association, died suddenly May 14th at Chattahoochie, Fla.

"Floyd" as he was affectionately and widely known, was also Chief of the State Hospital Fire Department at Chattahoochie. He had held the post of Secretary of the State Association for eighteen years.

Before becoming Chief of the Hospital Department he was for twenty years Chief of the Winter Haven, Fla. Fire Department. He was a past-president of the Southeastern Association of Fire Chiefs and at the time of his death was active in that Association and the International Association of Fire Chiefs. He was also President of the Chattahoochie Kiwanis Club. Funeral services were held May 17th in Chattahoochie.

A resolution of condolence was promulgated by the Florida State Firemen's Association, M. G. Bennett, Pres.

President Bennett has appointed Assistant Chief J. B. Chancey, Jacksonville, Fla. Fire Department, to fill the unexpired term of secretary of the Association.

DiFiore, Arson Expert, Dies

Gabriel DiFiore, 67, died in Pittsburgh, Pa., June 6. He was a former United States Secret Service operative who won acclaim in the famous Black Hand cases of some years ago.

Ten years ago, DiFiore retired from the Secret Service to take a post with the arson department of the National Board of Fire Underwriters. He recently was sent to Pittsburgh as a special agent in charge of the Board in that city. His home was at 22-59 19th Street, Astoria, Queens, N. Y.

Ex-Chief M. J. English Dead

Michael J. English, 68, Chief of the Willimantic Conn., Fire Department from 1941 to 1944, and a veteran of the Spanish-American War, died on June 7 at Windham Community Memorial Hospital after an illness of several months.

Born in Hartford, Chief English spent part of his life in Willimantic. Joining the Fire Department in the volunteer days, he was assigned to full-time duty when the Willimantic Department was motorized in 1917. He was named a Lieutenant in 1925, Deputy Chief four

BEFORE

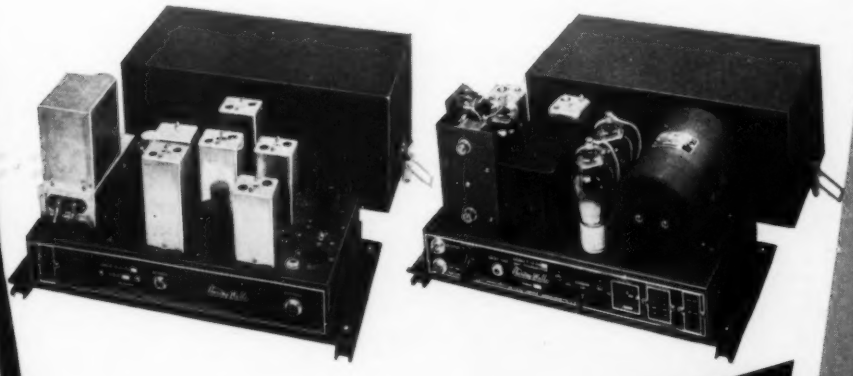
WAR

Shown below are Harvey-Wells Models R-10-PM and T-15-PM, a compact transmitter-receiver combination constructed to meet the demands of police and fire departments for reliable, fast communications. Built before Pearl Harbor, this equipment was widely known as a product of technical excellence, engineered for a long life of dependable service. Today the skill that created the R-10-PM and T-15-PM is turning out great numbers of communications systems for the Armed Forces.

AFTER

VICTORY

The shape of radio-telephone equipment which will come out of Harvey-Wells research laboratories is still a closely guarded secret. Through the long war years H-W receivers and transmitters have consistently measured up to the highest Government standards because they incorporate some of the most advanced developments in modern communications. In peacetime, you can count on these exclusive features to make Harvey-Wells equipment the finest in police and fire radio systems.



Harvey-WELLS
ELECTRONICS
SOUTHBRIDGE, MASSACHUSETTS

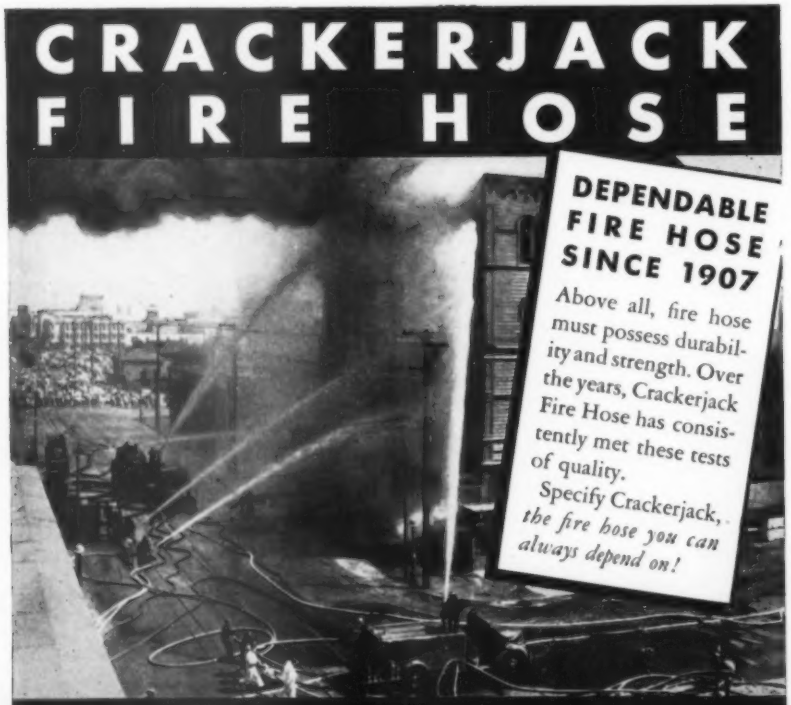
TO BE SURE

A fire fighter never knows what his problem will be . . . he may need Pressure; he may need Volume; but more often he needs *both Volume and Pressure,* the inseparable twins of fire-fighting.

To be sure of high performance—providing both adequate volume and adequate pressure—insist on a Hale Fire Pump for your next pumper.

Write now for up-to-date information on Hale Fire Pumps . . . built in all standard capacities.

HALE
FIRE PUMP COMPANY
Conshohocken, Pa.


CRACKERJACK
FIRE HOSE
DEPENDABLE FIRE HOSE SINCE 1907
Above all, fire hose must possess durability and strength. Over the years, Crackerjack Fire Hose has consistently met these tests of quality.
Specify Crackerjack, the fire hose you can always depend on!
The AMERICAN RUBBER Mfg. Co.
Park Avenue and Watts Street • Oakland, Calif.

years later and Chief in 1941. He was retired early last year.

Some years ago while fighting a fire on lower Main street, Chief English fell from a building and never fully recovered from that injury. He is survived by his wife, Mrs. Marcelline English; two sons, Clayton, with the Army in England, and Roger English, with the Navy in the Pacific.

The funeral was held on June 11. Many well known fire department officials from cities in Connecticut were present. THOMAS F. MAGNER.

Former Abilene Chief Roe Promoted

It has been disclosed that J. Ray Roe, former Abilene, Texas, Fire Chief who entered the government and served as a civilian of the fire prevention unit of the War Department for three years before being commissioned first lieutenant, has been promoted to captain.

He was commissioned lieutenant September 15, 1943, and served as fire inspector in the Eighth Service Command; as an instructor on the staffs of fire training schools for the Army at Bradley Field, Conn., and at Camp Pontchartrain, La. He went overseas more than a year ago and in March last, was transferred from military government to the Corps of Engineers. He has been a staff officer assigned to fire control.

Former Chief Cordes Dead

Frederick William Cordes, former chief of the Maplewood, N. J., Fire Department died suddenly on June 18 at Fort Wadsworth, S. I., where he had served as fire engineer since retiring from the Maplewood department in 1943. He was 57 and had been chief of the latter department nine years. He was a member of the Exempt Firemen's Association of Maplewood, New Jersey State Association of Fire Chiefs, New Jersey Fire Chiefs' Club, New England Fire Chiefs' Association, and Maple Lodge, F. and A. M. He leaves a wife, Mrs. Margie Dunnell Cordes, and daughter, Miss Margie P. Cordes.

Crane Heads U.F.A.

Fireman John P. Crane, vice-president of the Uniformed Firemen's Association of New York City was elected president of the UFA June 20; William J. Reid, who lost the contest for presidency against fireman Vincent J. Kane, two years ago, was elected vice-president. A third candidate on Crane's slate, Gerard W. Purcell, was elected treasurer. A heated contest for financial and recording secretary necessitated a run-off July 18.

Fireman-president Crane, is attached to H. & L. 12, N. Y. F. D., and has been a repeated and vehement critic of the city's administration over violation of the three-platoon system, dismissals for dual-job holding and other grievances. His criticism of the 84-hour work-week without extra pay as "slave-labor" resulted in his exile to a Staten Island fire company for almost a year. A resident of the Bronx, he was compelled to spend almost six hours a day in travel. Early this year he was returned to a Manhattan station.

Classified Advertisements

WANTED

Fire Equipment Supply Companies, to sell Morning Pride Protected Rubber Firecoats, with Wing Sleeves, Chest Protector, Face Protecting Collar, Wool Wristlets, Double Shoulders, No Dirt Pockets. Also Firepants and Mitts. Write Morning Pride Mfg. Co., 1986 Home Ave., Dayton 7, Ohio.

CHIMNEY POWDER

No need to send men on the roof for chimney fires. Has-Mor Soot Destroyer not only puts the fire out, it continues to work until it cleans the chimney, making it unnecessary to go back to another chimney fire. Put up in handy packages. Agents wanted. Harry S. Morgan, 52 Broad St., Johnson City, N. Y.

AGENTS WANTED

To sell High Grade line of Fire Protection Equipment and Fire Department Supplies. Good Proposition. Write: SCHWARTZ BROS., Inc., 731-33 Filbert St., Philadelphia 6, Pa.
Established over 37 years.

REPRESENTATIVES WANTED

Several territories open for representatives for the sale of fire apparatus. Write Box 25, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, New York.

POSITION WANTED

An experienced Fire Protection Engineer and a former municipal and army Fire Chief with twenty-seven years' experience wishes similar connections or with Fire equipment concern.
Have had some selling experience. Steady position main object. Central states preferred. Address Box No. 35, c/o FIRE ENGINEERING, 24 West 40th Street, New York, 18, N. Y.

FOR SALE

1927 Pirsch 500-gallon pump and hose truck in good and serviceable condition. Can be seen at Fire House, Hose Co. No. 1, Hendel Ave., North Arlington, N. J. Telephone inquiries after 7 P.M. Kearny 2-2673. Fire Commissioner John Black, North Arlington, N. J.

FOR SALE

1926 Model Pirsch Special 500 G.P.M. rotary pump with 80-gallon booster tank and standard equipment (no hose). City of Highwood, Highwood, Ill.

USED HOSE TRUCK WANTED

Will pay cash for used hose truck—1½-ton minimum—in good running condition. Reply, giving specifications, price and location. Write Box 40, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, N. Y.

Causes of Watchmen's Failures

Watchman supervisory and manual fire alarm service in the United States during the year 1944, as surveyed by the American District Telegraph Co., based on reports by its subscribers, shows that the service saved its customers 99.97 per cent of possible fire and water losses.

"Cold Weather is coming, Men! Protect Yourselves with—"

BODY-GUARD BUNKER SUITS

Thousands of firemen in all parts of the United States have been using them daily for over 15 years, because "Body-Guard" keeps them dry and comfortable at every fire. They are actually health insurance—they last for years—they cost so little. In fact many fire chiefs order them as standard equipment.

Just now due to war orders, only 5% of our facilities are available for home fire department business, but let us hear from you—we will fill your order as fast as we can.

ANY FIREMAN CAN HAVE A CATALOG BY WRITING

BODY-GUARD MANUFACTURING CO.
ST. JOSEPH, MISSOURI

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the FACTS.

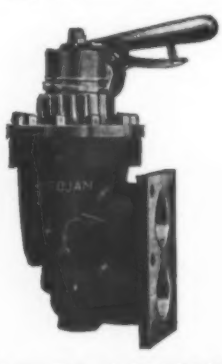
EDDY VALVE CO., Waterford, N. Y.

ROSS
RELIEF VALVES

1" to 2½" female threads

MODERN PUMPERS

demand these rugged, modern relief valves. Their simplicity and responsive dependability make them a must. Made in sizes from 1 inch to 2½ inches with capacities up to 1600 g.p.m. and pressures up to 750 lbs. Write for descriptive literature describing the complete line of



TRAILER PUMPERS

Trailer pumpers require valves made especially for this type of work, such a valve is the ROSS Trailer Pump Relief Valve. Made in sizes from 1 inch to 2½ inches with pressure adjustments from 10 lbs. to 750 lbs. and capacities from 0 to 500 g.p.m. at 120 lbs. pressure.

ROSS VALVE MFG. CO
INCORPORATED
P.O. BOX 595, TROY, N.Y.

Statistical summary indicates that human failures to transit signals were attributable mainly to forgetfulness. Other work distractions were second in the summary of reported failures. In the 114 cities from coast to coast and from Canada to the Rio Grande, with a total property valuation of $15,071,987,000 there were total losses of $4,496,323 as a result of 1,772 fires and/or 216,738 failures of watchmen to transit signals.

These failures were only seven one-hundredths of one per cent of the total signals, or a watchman patrol efficiency of 99.93 percent. Of the total 216,738 failures, intoxicated watchmen (316) was the lowest cause in the list; watchmen busily watching suspicious persons (472) was second low; locked buildings preventing admittance (821) was third low; AWOL watchmen (1876) came next; bad weather 2147, illness 2772, tardiness 2616 and quitting ahead of time 3126.

The most common cause of failure was 51,940 cases of lapse of memory or missing the time clock; distraction by other duties 51,345; denial of any failure 23,291; miscellaneous reasons 18,903; refusal to give a reason 16,856; slumbering 4,443.

New York leads the list of property values protected—$3,381,974,000 with a loss of $43,200 caused by 5,843 watchmen failures or by 49 alarms of fire; Chicago with $1,511,143,000 in values had 11,680 (tops) failures by watchmen and 180 (tops) alarms of fire with a loss of $511,804 (tops); Long Island City, N. Y. with values of $694,939,000 had 9,325 watchmen failures and 118 alarms of fire with a loss of $450,369; Philadelphia follows with values of $678,621,000, watchman failures 8,056 with 54 alarms of fire and property loss of $493,054; Los Angeles with values of $491,928,000 had 7,558 failures, 101 fire alarms and a loss of $198,991.

Two dozen cities reported "no loss" although all had some watchman failures: Akron, O.; Allentown, Pa.; Burlington, Vt.; Camden, N. J.; Canton, O.; Covington, Ky.; Dubuque, Ia.; Duluth, Minn.; El Paso, Tex.; Flint and ˣGrand Rapids, Mich.; *Green Bay, Wis.; Knoxville, Tenn.; Lincoln, Neb.; Miami Fla.; Ottumwa, Ia.; Quincy, Ill.; Reading, Pa.; Sioux Falls, S. D.; Superior, Wis.; Utica, N. Y.; Washington, D. C.; Winston-Salem, N. C. and Worcester, Mass.

ˣ 15 fire alarms.
* 6 fire alarms.

JERRY DALY

Annual Reports Received

Arlington, Mass. — One Hundred Thirty-Eighth Annual Report of the Town Officers of the Town of Arlington and the Town Records for the Year Ending December 31, 1944. 442 pages.

Maryland—Proceedings of the Fifty-Second Annual Convention of the Maryland State Firemen's Association, 1944. 112 pages.

West Virginia—Annual report of the State Fire Marshal for the Calendar Year 1944. 44 pages.

Indian Hill, Cincinnati, Ohio—"Your Fire Department"—Annual report of the Madeira & Indian Hill Fire Company. 8 pages.

JANESVILLE QUALITY TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

NOW AVAILABLE!
We can now supply old type ¾ Felt-lined Firemen's Boots.

JANESVILLE APPAREL CO.
JANESVILLE, WIS.

"Half-Mile-Ray"

PORTABLE EMERGENCY LIGHTS

STORAGE Battery and Dry Cell Outfits for all types of service. Also Spotlights for cab mounting on vehicles.

Send for Catalog "F"

THE PORTABLE LIGHT CO., INC.
216 William St., New York 7, N. Y.

Correspondence

O. C. D. Type Apparatus Not Dependable

To the Editor:

From the articles appearing in FIRE ENGINEERING, it is obvious that various committees and organizations are seriously considering the disposal of OCD fire fighting equipment. I am unaware of their findings. However, I am submitting this letter with the thought that it will serve as a guide to anyone seriously considering the obtaining of OCD equipment after the completion of hostilities.

It is necessary that my background and experience be included in this letter.

Before being commissioned in the Army of the United States, I had been a member of a large eastern city fire department for several years. I have been with the Corps of Engineers fire fighting units since they were activated in 1942. I have fought fires using OCD equipment under all conditions including severe air raids from Africa to Italy in the past two years.

The OCD fire equipment which I shall refer to is the 500 G.P.M. pump which incidentally has glutted fire houses from coast to coast; the class 325 overseas fire truck and fire hose.

I find the disadvantages of the 500 G.P.M. pump to be:

1. Unreliable priming system requiring a skilled operator, and I might add a trick operator, to prime the pump.
2. Pump casing and impeller are made of cast iron. Rust and scale form very easily.
3. Towing bracket is too weak to withstand operating even under normal conditions.
4. The pump when mounted on a trailer is very difficult to get into position, requiring at least four strong men to manipulate it.
5. The cooling system becomes clogged very easily. Note: During an air raid while fighting a blazing tanker the pump overheated within half an hour.
6. The pump is not balanced on the trailer.

I might mention that the equipment was kept in excellent condition by proper maintenance. In plain words it appeared to be in excellent condition when not operating. However, it could never be depended upon in case of an emergency.

Upon questioning officers and enlisted men in similar units, I found that they all have difficulty with the 500 G.P.M. pump.

The pump on the class 325 overeas fire truck is also a single stage centrifugal pump and although of lower capacity than the 500 G.P.M pump it is of similar construction.

At one fire we had sixteen class 325 fire trucks in operation from one to three hours each. The next day seven of them were in the shop due to malfunctioning.

The disadvantages of this unit are:

1. The unit cannot operate for long periods of time, that is, some quit after one hour, some after three hours, etc.
2. Pump mountings are poor. Vibrational stresses are set up causing the mountings to break.
3. The capacity of the pump is too low for the work required.

QUAKER

MUNICIPAL

FIRE HOSE

The quick way to preparedness and protection when ordering Fire Hose. Specify and insist on Quaker Municipal Fire Hose with Easy-Fold construction, because it is a vital factor you can depend on when Action gets at Fever Heat, the hose that takes high pressure and hard usage.

In Peace or War, interest in fire protection continues to make the need and necessity of Quaker Municipal Fire Hose.

Practically every city, town or community has its own Fire Department; so, for your topnotch fire fighting equipment be sure you have Quaker Municipal Fire Hose.

"If there is a way to get it done . . . QUAKER will do it."

FIRE HOSE — SUCTION HOSE

CHEMICAL HOSE — FORESTRY HOSE

REG. U. S. PAT. OFF.

QUAKER RUBBER CORPORATION

PHILADELPHIA 24, PA.

NEW YORK 7 - CLEVELAND 15 - CHICAGO 16 - HOUSTON 1

Western Territory

QUAKER PACIFIC RUBBER COMPANY

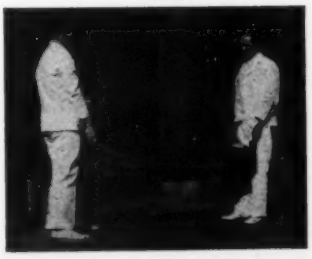
SAN FRANCISCO 5 - LOS ANGELES 21

Reeves

Reg. U. S. Pat. Office

FLEXIBLE STRETCHERS

No. 101



Every casualty, no matter how slight or how serious, can be made worse by rough, improper handling. Reeves Stretchers can be used in the most inaccessible places.

If your dealer cannot supply you write to:

A. SMITH & SON, Inc.
1237-39 RIDGE AVE.
PHILADELPHIA, PA.

$14.50

The element of time is of first importance in the successful treatment of burns. If a burn is treated within 15 minutes after it occurs, the probability of blister formation is reduced to a minimum. But if time is wasted before proper treatment is started, serious complications and infection may follow.

When using Gebauer's TANNIC SPRAY in the treatment of burns, the factors involving time-loss are eliminated. This preparation is a stable solution of tannic acid ready for immediate use. Packaged in a sturdy amber bottle having an automatic dispensing cap, which permits the projection of the solution in the form of a fine jet stream. Upon application the solvent evaporates rapidly, covering the burn with an evenly applied, dry and flexible film of tannic acid.

Gebauer's TANNIC SPRAY is a practical *first* first-aid treatment for first, second, and small area third degree burns. Write for literature.

THE GEBAUER CHEMICAL CO.
9410 St. Catherine Ave. • Cleveland 4, Ohio

FIRE ALARM TRANSMITTERS

Manufactured to

STANDARD or INDIVIDUAL SPECIFICATIONS

A - B - C — 4 to 26 DIGET
FIRE ALARM TRANSMITTER

SOUTHERN SWITCH & SIGNAL CO.
SHREVEPORT, LA.

4. The truck does not compare favorably with the fire truck used in civilian practice.

5. A satisfactory nozzle pressure cannot be maintained on two 2½-inch lines, 1-inch tip, and 350 feet in length.

We do not use our pumps over here as much as we did in civilian practice. It is a good thing we don't inasmuch as at least half of them would be in the shop at all times.

The 2½-inch rubber lined double jacket fire hose used overseas is equipped with malleable iron couplings. It usually requires two men to break the couplings due to the accumulation of rust. Against good fire department practice, I have found it necessary to oil the couplings. This practice results in the deterioration of the rubber gaskets and the rubber lining.

This article was written with the understanding that OCD fire equipment is similar to that used by the Army fire service overseas.

The sad experiences that fellow officers and myself have had with this fire equipment should discourage any civic organization from accepting it, let alone purchasing it. Very truly yours,

E. J. N.
1st Lt., C. E.
Commanding.

High Pressure Fog

To the Editor:

It is said there is so much controversy on the subject of high and low pressure fog that a definite statement is always welcome.

I will try to supply the answers to a set of questions asked that should go a long way in solving the above subject. My answers are based on the knowledge gained by experience at this Naval Air Station since May 7, 1942, and from over forty years of fire fighting experience in a large municipal fire department.

Most all of our firefighters including myself attended the Airplane Crash Fire Fighting School held there on this air field from March 19 to June 1, 1944. Since that time, our civilian fire department has experimented with all types of fog and spray streams on gasoline, oil, plane fires and on high voltage electric wires while the insulation was burning.

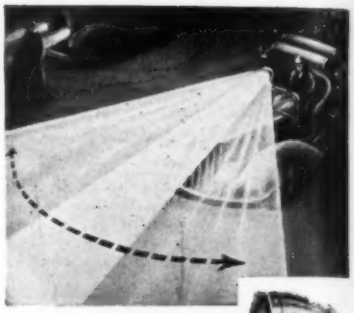
I will present the following questions and answers to throw light on the subject.

What is high presure fog? It is a water fog shot from a high pressure fog nozzle or gun at from 550 to 650 pounds nozzle pressure. In order to get full advantage of high pressure fog, firemen must work close up to the fire.

The higher the pressure, the finer the fog, because the higher pressure causes a wide spread from the tip of the applicator; as this wide spread reaches out into space, the power behind it dissipates, and it becomes a low pressure fog.

Can low pressure fog be produced by a high pressure fog gun? Yes, low pressure fog is produced beyond the point where the high pressure fog starts its dissipation.

What is a water spray, and how does it differ from a water fog? A water spray is produced by spray nozzles and spray applicators at from 250 to 350 pounds engine pressure. An applicator



GET THERE FASTER

Clear the Street on Your Side with this efficient Wig-Wag Redhead on Your Equipment

You clear your side of the street quickly, day or night, as the oscillating red beam of this Wig-Wag Redhead sweeps the street and flashes red signals through to the windshields of cars away ahead of you. You get there faster, safer, with less use of siren. Scientifically built; moderately priced.

Test This Better Warning Light
Write today for folder 145

CARPENTER MFG. CO.
2001 Master-Light-Bldg., Boston 45, Mass.

Fyr-Fyter equipment has proven its value in preventing small fires from becoming disastrous through the loss of life and property. Recent catastrophic fires with terrific loss of life emphasize the urgent need of fire protection. A complete line of Underwriters Laboratories labeled Fire Extinguishers.

HELP SAVE LIVES AND PROPERTY

Get Fyr-Fyters for safety's sake. We advise and serve war production plants, public institutions, etc., immediately. Write us today regarding Fyr-Fyter equipment for your own protection.

THE FYR-FYTER CO.
Dept. 101, DAYTON 1, OHIO

BUY WAR BONDS — ARMY-NAVY E — **Fyr-Fyter**

will give a finer spray, and is used for close-up work only. The spray is composed of very small droplets of water and is homogeneous like water fog. There is a low velocity and a higher velocity spray—the higher velocity wil. produce a firmer spray and a wider spread, hence, a greater coverage.

Can a high pressure fog stream be used on high tension electric wires? Yes, with complete safety. A few weeks ago, our fire department was called to fight a fire off the air field. The 125 Crash Truck and crew responded; on arrival they found one four-room house fully involved and the house next to it partly involved. Two high pressure lines were brought into play. The fire was knocked out within a few minutes, and much property close by was saved. The insulation on high tension electric wires was burning: a ¾-inch high pressure fog stream was thrown on these wires. They sparked, but no ill effect was felt by the man holding the nozzle. This proves that high pressure fog streams can be used with safety on high tension electric wires.

We on this air field have found out from our experience in fighting plane crash fires as well as all other kinds of fires, that water properly used will do the job of extinguishment.

Respectfully yours,
L. C. Moore, Fire chief
N. A. A. S. Mun. No. 1
Jacksonville, Fla.

Boston Issues Guide Book

The Boston Fire Department, Chief Samuel J. Pope, has issued a "Guide Book for New Appointees" which was prepared and edited by former Fire Commissioner William Arthur Reilly.

The booklet is intended for use by the newly appointed fireman, to acquaint him with the organization and general operational practices of the department. The booklet is published in four sections and an index and contains a message of welcome from the Commissioner to the new man.

Section 1 covers Location of fire companies; job classifications; uniforms; salary schedule; hours of employment; vacations; special assignments and residence rule. Section 2 covers retirement system; death benefits; injuries; sickness and hospitalization. Section 3 contains information about the Auxiliary Divisions of the department and a brief outline of water supply system. Section 4 is a brief history of the fire department.

Fire Chief Wanted

The Village of Winnetka, Illinois, (population, 13,000), which is a suburb of Chicago, will have an opening for position as Chief of the fire department in a month or two.

Starting salary will be no less than $3,600 per year, with some opportunity for advancement, depending on performance and length of service. For men under 35 years of age, liberal retirement privileges are provided by the Illinois Firemen Pension Act; in addition, liberal vanation and sick leave allowances are granted.

If interested, contact Mr. H. L. Woolhiser, Village Manager, City Hall, Winnetka, Illinois.

Here's the

Quicker, Safer Way to Put Out Fires

The Universal Nozzle provides the *quicker* way to put out fires because the hoseman can change the type of stream in an instant for any sudden change in fire conditions. The Universal Nozzle provides the *safer* way to put out fires because it can put a 130 degree water curtain between the hoseman and the flames . . . also in an instant . . . while retaining a solid stream, if desired. The Universal is the versatile nozzle, proved by seven years of actual use under all conceivable conditions.

Solid Stream • Fog • Water Curtain
or Any Combination
with

The UNIVERSAL NOZZLE

Satisfied Users Include

The U. S. Army and Navy at their air stations, the U. S. Coast Guard on its vessels, in addition to industries and municipal fire departments everywhere.

Write for Details

Inquiries about this remarkable nozzle are invited. Dealers, industries, and fire departments will be sent full details without any obligation.

L. N. CURTIS & SONS
Emergency Equipment
451 Hudson St.
OAKLAND 9, CALIF.

A BADGE *to be proud of* NOW *more than ever* BEFORE

Now—because of the Government's prohibition of the use of nickel, brass, copper, nickel plating, and chromium—we are making these badges and insignia in sterling silver, sterling silver gold plated, rolled gold on sterling silver and 14 karat gold.

Today—for just a little more, you get a sterling silver Braxmar Badge—without doubt the best badge you can buy anywhere.

The blue covered catalog is the latest published but write for our new price list, effective July 29, 1943. Only prices in the catalog on 14 karat gold items are still in effect. A special Fire Dept. circular is now in preparation. Watch for your copy.

C. G. Braxmar Co., 242 W. 55th St., N. Y.
JOHN O. VEIT, Pres.

BRAXMAR BADGES
Standard for over 60 years

"ALL AMERICAN CHOICE"
INVINCIBLE NOZZLES
PREPARE — PROTECT

Portable equipment is the watchword of today.

Buy

INVINCIBLE NOZZLES

and enjoy the benefits derived by experience of the pioneers in the nozzle field.

Fig. 403

F. N. McINTIRE BRASS WORKS
Successors to A. J. Morse & Son, Inc.
BOSTON, MASS.
1837 — 1945

CIRCUL-AIR
FIRE HOSE DRYER

- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
- Air-conditions as it dries

THE CIRCUL-AIR CORPORATION
6339 East Palmer Avenue
DETROIT 11, MICHIGAN

War Fare

Fire-Fighting Tanks

From the *Yank*, the serviceman's magazine, we receive two items via old faithful contrib' Tex Bradford.

"Why aren't several tanks in an armored division equipped for fire-fighting? The idea occured to me while serving with an armored division in France. Many times a burned tank or half-track held us up on a road or made a city street too dangerous to enter because of the exploding ammunition. At night, a burned vehicle illuminated other vehicles or men, making an excellent target.

"If a fire-fighting tank could have a hose instead of its 75-mm gun and chemicals for fire extinguishing, it could safely go near enough to a burning vehicle to extinguish the fire."—Pvt. Mark Slen.

* * *

Flushing the Jap

The other item, has an idea for doing the reverse of burning out the japs—drowning 'em. Says S/Sgt. Harmon L. Field: "I would like to offer a suggestion to speed up the completion of the island fighting in the Pacific. This may be far-fetched or thought of before now but, if not, here goes. Thoroughout this island-to-island fighting we have been encountering much opposition on the various atolls, due to the fact that the Japs have buried themselves underground. The only devised means, so far used for digging them out has cost us a great many men as well as much material and time. My suggestion is that we drop a hose line into the ocean, fitted to an armored tank with a motor like that on a fire engine to increase the pressure of water hoses. With this device they could flood the pillboxes, causing the Japs either to come out or down.

"I also want to add another suggestion for the use of this device, which is similar to the New York Fire Department's pressure-hose system that they use on apartment-house fires. This also could be used for knocking out or setting up a barrage against machine-gun emplacements."

Well, Sgt. Field, we never tried to flood one o' those Jap caves, but one of our returned Joe's says that it would take a lot of the Pacific Ocean to fill up some caves he's seen; and he'd hate to have the job of "stretching in" all the hose needed to get the necessary water to the cave objective. Also, he remarks, in passing, don't let'em use any of that single-jacket OCD hose they've been sending abroad; its likely to be more dangerous bustin' in your face than Jap fire.

As for us, we dunno what the Sergeant means about the "pressure-hose system used on apartment-house fires." Most of those fires, even in the h.p. districts, are fought with hand-lines, which require only fairly low pressures.

* * *

Hot Off the News Tape

Decoration ceremonies honoring the heroism of 139 officers and enlisted men of the bombed-burned carrier Franklin were interrupted dramatically June 21 at the Brooklyn Navy Yard when fire broke out in the forward boiler room. Captain Leslie Gehres, commanding of-

"THE TOPS" for Safety & Quality

CAIRNS
One-Piece, Cushion-Lined
ALUMINUM HELMETS

These sturdy models are again available for prompt delivery; crown stiffened by corrugations and four heavy combs; brim reinforced by tempered steel wire rolled into beaded edge.

Let CAIRNS supply all your needs: — helmets of every description, in aluminum, leather or Flint-Flex; turn-out clothing, rubber coats, rubber boots, caps; fire record books, secretary's forms, etc.

Write for Catalog 310

CAIRNS & BROTHER
Outfitters to Firemen Since 1836
444 LAFAYETTE STREET, NEW YORK 3

"The Superior"
A MODERN and PROVEN
LIFE NET

The SUPERIOR LIFE SAVING NET is stronger than any other, because of the tested breaking strength of 1,800 lbs. of each individual rope.

The direct pull shock absorber system eliminates all friction and its greater resiliency provides for a safer, easier landing.

Made of Chrome Molybdenum steel, the frame may easily be folded for storage within a few seconds.

For the utmost in LIFE SAVING VALUE . . . "SPECIFY SUPERIOR".

For ECONOMY, have your old net converted into a "SUPERIOR".

William Moeller
Designer Consultant

Other SUPERIOR Products:
Training Nets and Structures
Ladder Belts
Life Size Training Dummies

SUPERIOR FIRE EQUIPMENT CORP.
235 E. 42nd St. New York, N. Y.

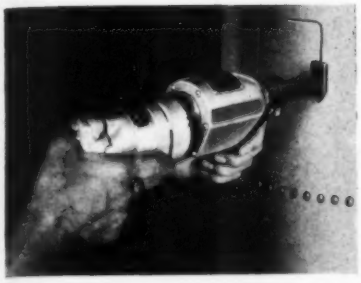
THE NEW

SAW-GUN

SHOULD BE STANDARD

ON ALL

FIRE-FIGHTING EQUIPMENT



Here's Why..!

The Saw-Gun is a portable power-saw that will quickly cut into all metals, wood and other materials. Quickly attaches to any electric or air drill, and may also be propelled by a flexible shaft. Insert ordinary hack-saw blade for cutting.

Firemen equipped with this handy tool can now get at the fire quickly. Can cut openings into obstructions regardless of their material. Cuts rapidly through heavy gauge steel. No need to waste precious time removing steel gratings . . . cut them out of the way with this amazing portable tool. Does away with slow, cumbersome, dangerous gas cutting torches, together with their long lines of hose and heavy tanks.

Progressive fire-chiefs who know the importance of getting at a fire *fast*— who want a quicker means of getting to entrapped persons, will add the Saw-Gun as standard equipment.

ONLY $42.00

QUICK SHIPMENTS ON AA-5 PRIORITY OR HIGHER

Sold on Money-Back Guarantee

SEE YOUR JOBBER or WRITE DIRECT

Mid-States EQUIPMENT COMPANY

Saw-Gun Division

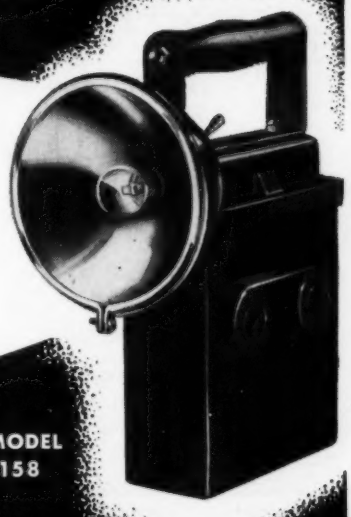
2419 S. MICHIGAN AVE., CHICAGO 16, ILL.

ficer of the ship, had just begun a short speech to men of the Navy Yard, prior to reading the citations, when informed that the carrier was on fire. The ship was berthed about 375 yards from where the ceremony was taking place, and Captain Gehres immediately dispatched engineers and damage control parties to aid the yard workers in fighting the fire which was out in half an hour . . . Air pilots, forbidden to practice low flying and landings at LaGuardia airport in New York City are utilizing nearly Westchester County's new Rye Lake airport for that purpose with consequent danger to residents and property, according to charges filed with County Executive Herbert C. Gerlach, by homeowners . . . Fire chiefs continue to be pleased over the cigarette shortage, one of 'em being Chief William Fitzgerald, Seattle, Wash., who reports that fires due to cigarettes were down in 1944 over 1943 and the 1945 record isn't too bad, either (Thanks Joe Green). . . . The Coast Guard reports that all of the 31 aboard the tanker "Sonora," bound from Freeport, Tex., to Boston, Mass., were saved when the ship took fire between West Palm Beach and Fort Pierce, June 22. The cargo was sulphur, and gave fire-fighters a battle . . . Heroic action by an American mining engineer, Gordon Lee, is reported to have saved 400 lives in the June disastrous Sewell copper mine fire in Rancagua, Chile, where about 500 perished. Mr. Lee, trapped with the others, led 400 to safety through a maze of tunnels . . . A $50 fine for smoking on a hospital ship in Brooklyn, N. Y., was paid by Benjamin Cohen that city. . . . In Whitley, England, June 17, a huge ammunition dump at a Canadian Army camp exploded, shaking villages up to 20 miles away; persons reported the explosions lasted three hours. Cause and fatalities not given. . . . We're still trying to get the "dope" on the warehouse fire at the Army's Voorheesville Holding and Reconsignment Depot, Voorheesville, N. Y., which gave the depot's fire brigade, aided by an Albany, N. Y., fire company and volunteer departments from several nearby communities, and hour and a half battle. No soap, however. It's another "military secret." How'd the mutual aid plan work, Chief Fleming? . . . Another belated item, worth printing is the account of the derailment of that Missouri-Kansas-Texas train near Pilot Grove, Mo., when two freight cars of ammunition and twenty cars of oil caught fire after the wreck. Exploding shells and burning oil gave railroad wrecking crews and firemen a taste of real war . . . Mrs. Harold Cady, of Schenectady, N. Y., walking down a street, was slightly injured and startled no end when a container of bronzelike powder, falling from out of the sky, burst open showering her with its contents. The "bomb" was later identified as "part of an airplane" by the Second Service Command . . . Hundreds of Britain's mobile fire pumps which helped to defeat the German blitz went into action to drain those areas of Holland flooded when the Germans breached the dikes. How about sending 'em some of our thousands of OCD emergency pumps which nobody seems to know what to do with? . . . In Kittery, Me., the Volunteer F. D. has a patriotic angle in appealing to residents to exercise fire prevention. Newspaper

THE NEW LOW PRICED

WHEAT

Rechargeable Spotlight



MODEL 158

NOW AVAILABLE FROM STOCK— ADAPTABLE TO ANY REDUCED BUDGET

FEATURES

- Less expensive operation than dry cells.
- Free use of hands. Light carries conveniently on shoulder strap.
- Positive "Non-spill" construction.
- Light can be focused and directed as desired.
- Weighs only 92 ozs. complete.
- Simple to charge and water. No need to take lamp apart.
- Low price and operating cost make Wheat adaptable to any reduced budget.

2,500 FOOT BEAM

25,000 CANDLE POWER

1,000 HOURS OPERATION

KOEHLER MFG. CO.

MARLBORO, MASSACHUSETTS

WENTWORTH
FIREMAN'S UNIFORM CAPS
Union Made **Prompt Delivery**

No. 342

Wentworth Fireman Caps are made of the Highest Quality Standard Materials available and by the Best Skilled Union Craftsmen in all the New and Standard styles. Our 50 years of experience and skilled workmen guarantee you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.

No. 441

Write direct for latest circular and prices or see your local dealer.

WENTWORTH-FORMAN CO., INC.
578b Washington St., Boston, Mass.
Manufacturers
Fireman Cap Specialists for Over 50 Years

HOSE BRASS GOODS
WB LINE
THE WOOSTER BRASS Co.
WOOSTER, OHIO

SOME WORDS FOOL YOU
like
RAISE (to erect) **RAZE** (to destroy)
BUT
WOOSTER BRASS always means the BEST in fire equipment supplies.

THE WOOSTER BRASS CO.
WOOSTER, OHIO
When you specify products bearing the TRUMPET trademark, you can SAVE and BANK on SAFETY.

advertisements were used to point out the fact that virtually all members of the department are employed at the near-by Portsmouth, N. H., Navy Yard and fire alarms "are a hindrance to the war effort." . . . Seven British seamen were jailed when they couldn't pay $25 fines each for smoking aboard an Army transport docked in the North River, New York City. The old story "they didn't see any signs." . . . Famous Victoria Pier, in Folkestone, Eng., which survived cross-channel shelling, bombing and the vicissitudes of war, succumbed to flames from "natural" causes late in May. . . . Patrick Walsh, fire commissioner and chief, New York City, after returning sirens to the city's fire trucks, says that if accidents to apparatus show an increase, he'll yank'em off the rigs again. . . . The Alpha and Omega of Britain's five-year blackout was the little town of Lowestoft, on the east coast of Britain. Not only was Lowestoft the first British town in which an air raid alarm was sounded, back in 1939, but it was also the last to experience an air-raid alert, in 1945 . . .

* * *

Pump a Flame Thrower, Too

A group of American Navy officials with no respect for the essential integrity of inanimate things, invented a schizophrenic (look that'un up) high-pressure pump on Peleliu Island, according to one of our Navy contrib's. The men converted the pump normally used for dousing flames, into a flame thrower and turned it on two Jap' strong-points.

It is said that with the pacification of Peleliu, the old pump has returned to the amicable side of its double life and once again is being used on fires. However, on it now appear reproductions of two Jap flags won in combat.

* * *

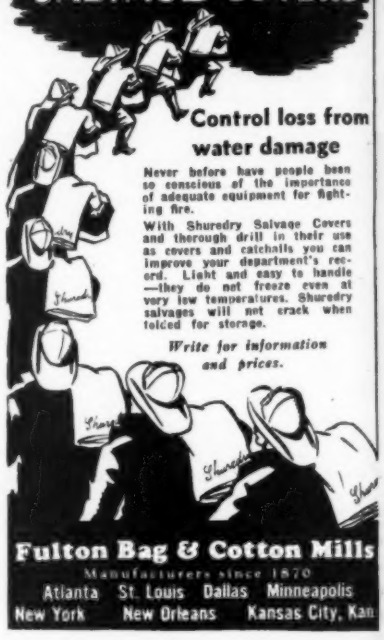
Jap Balloon Bombs

Further details of Japan's "fantastic effort" to bomb the west by means of bomb-carrying paper balloons are gradually leaking out. According to Army authorities "the only reason anything is being said now, was for the protection of the public, to warn civilians who might find unexploded bombs not to take a chance on being hurt by trying to handle them.

"With the coming of warm weather and the end of the school season, it is desirable that people and especially children living West of the Mississippi River be warned of this possible hazard and cautioned under no circumstances to touch or approach any unfamiliar object. These balloons are of grey, white or greenish-blue paper, about thirty-three feet in diameter. They carry a few small bombs suspended beneath the balloon. It is believed that the main purpose of the bombs is to set brush and forest fires. They are dangerous, and should not be touched by anyone not familiar with bombs."

Although specific information concerning the effectiveness of these bombs is being withheld by the Army, it was disclosed that in one instance the wife of an Oregon minister, The Rev. Archie Mitchell, pastor of the Christian Alliance Church, Bly, Ore., and five children of his congregation were all killed when a balloon, which they had discovered on an outing, exploded.

USE Shuredry SALVAGE COVERS



Control loss from water damage

Never before have people been so conscious of the importance of adequate equipment for fighting fire.

With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.

Write for information and prices.

Fulton Bag & Cotton Mills
Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis
New York New Orleans Kansas City, Kan

BOOKS

For the Modern Fire Fighter . . .

Recognized by the Fire Service as Standard

Questions and Answers for Lieutenant and Captain—$2.50

Promotional Study Course for Firemen—$3.00

Fire Chief's Handbook—$4.00

Fire Service Hydraulics—$3.00

(The Above Prices Are All Postpaid)

CASE-SHEPPERD-MANN PUBLISHING CORP.
24 West 40th Street
New York 18, N. Y.

Questions and Answers

(*Continued from page* 463)

couplings were made from bronze and brass, with iron as a substitute during the war, and that expansion rings were made of brass with iron as a substitute during the war. Are there any copper expansion rings?

I am a member of an aerial ladder company, and I cannot find anything that gives a good description of the operations at the base of an aerial ladder, nor anything about recommended methods of spotting a truck and raising the aerial ladder. Could you help me on this score?

J.H.W.

Answer: The first hose used in thi country was made of leather, and it was, of course, much heavier than cotton rubber-lined hose. It is very likely that because of its weight, fifty feet made up a satisfactory load for men to handle. There is no other reason, so far as we krow, why it should be made in 50-foot sections today.

Great Britain uses 100-foot sections, but until recently, most of the hose they employed was unlined linen hose. This hose is much lighter than the cotton, rubber-lined hose, and thus 100 feet could be handled very easily.

Aluminum couplings are not made in quantity today. One manufacturer has experimented with this metal for couplings, but we do not believe that they are yet in production. Brass couplings have been standard for years, and with the exception of a short time during the current war, when malleable iron was employed, they are the type commonly employed.

Expansion rings are made of brass rather than copper.

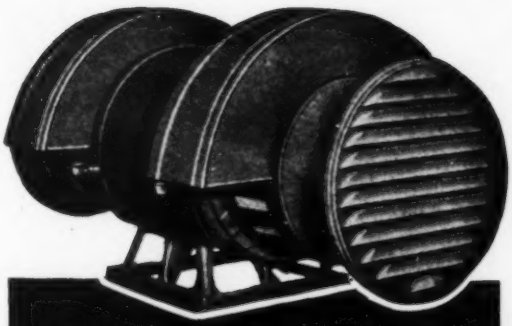
With regard to aerial ladder operations, the aerial ladder is usually placed alongside the curb with the ladder in such a position that it will rest evenly at the point desired. Where sidewalks are narrow, it may be necessary to spot the ladder out from the curb.

Some departments jackknife the tractor on an aerial ladder at an angle of 60 degrees, particularly where the street is wide enough so that such placement of the tractor will not obstruct the movement of apparatus through the street.

Preference Ratings Not Needed

In a release dated June 13, 1945, the War Production Board has announced that applications on Form WPB-541 for preference ratings to purchase fire extinguishers and portable and stirrup pumps no longer are being accepted by the War Production Board. Since these items now are in comparatively good supply, WPB said, it is expected that persons who need them will be able to buy them in the open market without preference ratings.

However, the Board adds, persons who are eligible to use maintenance, repair and operating supplies ratings, as provided in Priorities Regulation 3, may use these ratings to obtain fire extinguishers and portable and stirrup pumps.



STERLING MODEL "M"

GENERAL ALARM SIREN

You Can Depend On It *ALWAYS*

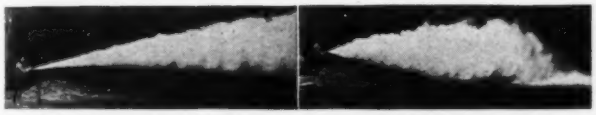
An absolutely dependable, tried and proven siren for communities of all sizes. Loud, clear, simple to instal and no maintenance to bother with. Embodying the "know how" of the oldest and largest makers of siren signals in the fire field. Write for descriptive literature and list of towns using the model "M".

ALSO
manufacturers of a complete line of apparatus sirens.
Write for literature.

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

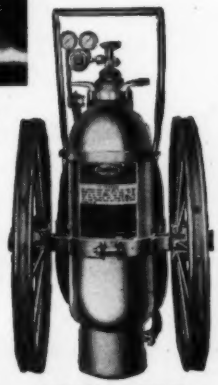
NOW...NEW DUAL-STREAM NOZZLE *further steps up fire-killing punch of* **DUGAS EXTINGUISHERS!**

NEW DUAL-STREAM NOZZLE deals effectively with spill fires and fires difficult to reach because of height or obstructions. Designed for use with DUGAS wheeled extinguishers, the new Dual-Stream Nozzle greatly increases fire fighting range and effectiveness. A turn of the handle gives a *straight* stream with a range of 45 feet —or a *fan* stream with a range of 15 feet.



STRAIGHT STREAM of fire-killing DUGAS Dry Chemical permits a large fire to be knocked down from a safe distance before operator goes in to extinguish it.

FAN STREAM enables operator to concentrate heavy cloud of DUGAS Dry Chemical on fire and minimizes flash-backs.



DUGAS 150-A WHEELED EXTINGUISHER

Quick Facts about DUGAS Dry Chemical

- For extra-hazardous fires involving flammable gases, liquids, greases or electrical equipment.
- Not an electrical conductor.
- Non-toxic, non-corrosive, non-abrasive.
- Not affected by extreme cold or heat.

AN ANSUL PRODUCT
duGas
THE MASTER OF FLAME

Write today for complete information regarding DUGAS Wheeled Extinguishers with the New Dual-Stream Nozzle...and DUGAS Hand Extinguishers.

Approved by Underwriters' Laboratories, Factory Mutual Laboratories.

ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN
DUGAS DIVISION

ELKHART

FIRE DEPARTMENT EXTINGUISHERS

SODA-ACID AND FOAM

Again Available

GOVERNMENT RESTRICTIONS on extinguishers have been lifted (except for plating). We can now give you the same design and quality that made Elkhart Extinguishers the choice of many leading apparatus manufacturers before the war.

Specify Elkhart Extinguishers on your new apparatus to be sure of the best. The Elkhart trade mark is your guarantee of thoroughly sound design and extremely high quality.

ELKHART BRASS MFG. CO. Inc.
ELKHART, INDIANA

ADVERTISING INDEX

FIRE ENGINEERING
JULY, 1945

	Page
Acme Protection & Equipment Co., Inc.	486
Akron Brass Mfg. Co., Inc.	446
Aluminum Ladder Company	494
American District Telegraph Co.	493
American-La France-Foamite Corp.	447
American Marsh Pumps, Inc.	492
American Rubber Mfg. Co.	496
Anderson Fire Fighting Equipment Co., Inc.	477
Ansul Chemical Co.	505
Atlas Safety Equipment Co., Inc.	473
Barton Instrument Co.	490
Bean Mfg. Co., John, Division Food Machinery Corp.	438-439
Body Guard Mfg. Co.	497
Braxmar Co., C. G.	501
Buffalo Fire Appliance Corp.	437
Cairns & Bro.	502
Cardox Corp.	489
Carpenter Mfg. Co.	500
Circul-Air Corp.	502
C-O-Two Fire Equipment Co.	440
Curtis & Sons, L. N.	501
Doolittle Radio, Inc.	491
E & J Mfg. Co.	442
Eastman Company, Inc., Samuel	472
Eddy Valve Co.	497
Elkhart Brass Mfg. Co.	506
Emerson Co., J. H.	Inside Front Cover
Eureka Fire Hose Div., U. S. Rubber Co.	474
Federal Electric Co., Inc	435
Fog Nozzle Co.	Back Cover
Four Wheel Drive Auto Co.	Inside Back Cover
Fulton Bag & Cotton Mils	504
Fyr-Fyter Co.	500
Gamewell Company	450
Gebauer Chemical Co.	500
General Detroit Corp.	467
Goodall Rubber Co.	478
Hahn Motors, Inc.	494
Hale Fire Pump Co., Inc.	496
Harvey-Wells Communications, Inc.	495
Homelite Corp.	483
Janesville Apparel Co.	498
Kaar Engineering Co.	481
Kidde & Co., Walter	471
Koehler Mfg. Co.	503
M. & H. Valve & Fittings Co.	490
McIntire Brass Works	502
Mack Mfg. Corp.	441
Mearl Corp.	485
Mid-States Equipment Co.	503
Midwestern Mfg. Co.	468
Mine Safety Appliance Co.	448
National Foam System, Inc.	469
Oren Fire Apparatus Co.	479
Pacific Marine Supply Co.	482
Pirsch & Sons Co., Peter	475
Porter Inc., H. K.	484
Portable Light Co.	498
Pyrene Mfg. Co.	480
Powhatan Brass & Iron Works	476
Quaker Rubber Corp.	499
RCA Victor Div., Radio Corp. of Am.	444-445
Rockwood Sprinkler Co.	487
Ross Valve Mfg. Co.	498
Scott Aviation Corp.	449
Security Fire Equipment	492
Smith, A.	499
Smith & Co., D. B.	470
Southern Switch & Signal Co.	500
Sterling Siren Fire Alarm Co., Inc.	505
Superior Fire Equipment Corp.	502
U. S. Motors Corp.	488
Ward-LaFrance Truck Div., Great American Ind., Inc.	443
Waterous Company	466
Wentworth-Forman Co., Inc.	504
Wooster Brass Co.	504

FWD's FIRST

in Speed
in Safety
in Power

SERVICE BRAKE

PARKING BRAKE

QUICK, POSITIVE, EMERGENCY STOPS

FWDs have two separate and independent four-wheel braking systems, with brake drums on each wheel . . . a distinct advantage that is another of many reasons why hundreds of fire departments depend upon FWDs for efficient, safe fire-fighting apparatus. FWDs' two super-braking systems on all four wheels, in addition to properly balanced weight distribution to all four wheels, provide the most effective braking ability possible. The best buy in fire trucks is FWD. WRITE FOR LITERATURE.

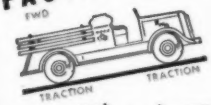
THE FOUR WHEEL DRIVE AUTO COMPANY • CLINTONVILLE, WIS.

Canadian Factory: Kitchener, Ontario

FWDs Go Where Other Vehicles Fail
NO ROADS TOO TOUGH OR STEEP FOR FWDs

FASTER GET-AWAY

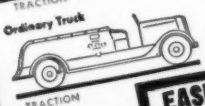
FWD



TRACTION TRACTION

FWD power on all four wheels gets a four-way grip on any road and assures faster get-away.

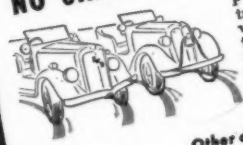
Ordinary Truck



TRACTION

Other designs, lacking drive on front wheels, lose time in get-away.

NO SKID, NO SLIP, NO SLUE!



Powered steering traction holds front wheels to direction of turns, thus minimizing skid-danger. Skidding tests conducted on ice show 50% less skidding.

FWD . . . non-skid.

Other designs more liable to skid.

EASIER HANDLING AT HIGH SPEEDS

FWD DESIGN

WEIGHT 40%

60%

FWD DESIGN balances weight on all four wheels . . . assures easy handling at any speed.

ORDINARY DESIGN

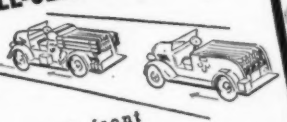
WEIGHT 20%

80%

OTHER DESIGNS, with unbalanced weight distribution are difficult to handle at high speeds.

GREATER HILL-CLIMBING ABILITY

FWD's front wheel pulling power increases hill-climbing ability. Reserve traction in all 4 wheels.



POWER

Non-powered front wheels "block" progress of truck on inclines, reducing steep hill-climbing ability.

POWER

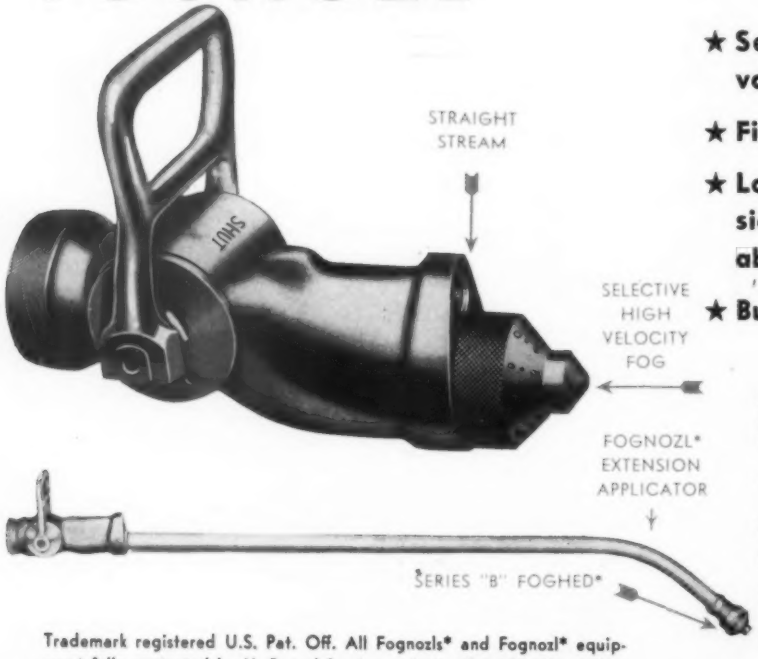
FWD

FOUR-WHEEL-DRIVE *Fire Apparatus*

GETS TO FIRES *FASTER* and SAFER!

the PERFORMANCE of FOGNOZL*

GRISWOLD ORIGINAL
All Purpose
FOGNOZL*



Finger tip control plus smooth floating-gland rotary valve action—exclusive Fognozl* features—account for the supreme performance of the New Series 4 NAP ALL-PURPOSE FOGNOZL*

- ★ **Selective high or low water volume with high velocity fog**
- ★ **First class straight stream**
- ★ **Low velocity fog from extension applicator instantly available**
- ★ **Built in shut-off**

All in the New Series 4 NAP FOGNOZL*

"When seconds count, don't be in doubt — use a genuine Griswold Original Fognozl*. Many other styles and combinations. Write for further information.

Trademark registered U.S. Pat. Off. All Fognozls* and Fognozl* equipment fully protected by U. S. and foreign patents allowed and pending.

FOG NOZZLE COMPANY

1520 EAST SLAUSON AVENUE — LOS ANGELES 11, CALIF.

FOG NOZZLE OF CANADA, LTD., MONTREAL, CANADA